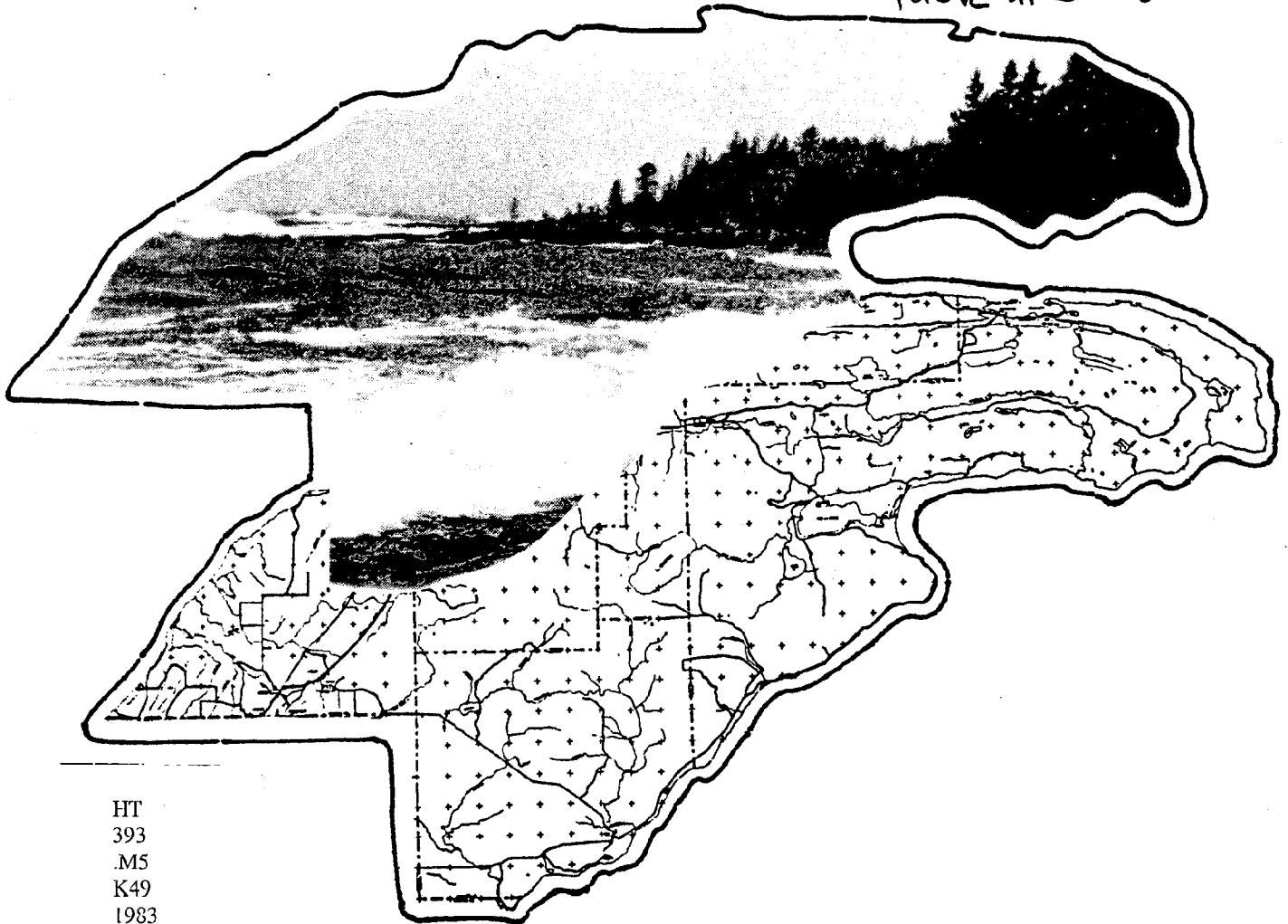


KEWEENAW COUNTY

SHORELAND MANAGEMENT PLAN - 1983

Task #5A-2



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393
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K49
1983



DIVISION OF
LAND RESOURCE PROGRAMS
DEPARTMENT OF NATURAL RESOURCES

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KEWEENAW COUNTY
SHORELAND MANAGEMENT PLAN
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ACKNOWLEDGEMENTS

This project was made possible by a cooperative effort of the Keweenaw County Board of Commissioners, the Keweenaw County Planning Commission, and the Division of Land Resource Programs of the Michigan Department of Natural Resources.

Funds for this project were made available by the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, as administered through the Division of Land Resource Programs, Michigan Department of Natural Resources. Local match to this project was provided by Keweenaw County, the Louisiana-Pacific Corporation, Longyear Realty, the Copper Range Company, the Copmead Corporation, and Upper Peninsula Power.

Appreciation is extended to all those who participated in this planning effort, including Ray Clark from the Cooperative Extension Service and Ron Kinnenun from the Michigan Sea Grant Program.

THIS PLAN IS DEDICATED TO THE RESIDENTS OF KEWEENAW COUNTY, ESPECIALLY THOSE WHO TOOK THE TIME TO PARTICIPATE IN THE VOTER SURVEY, ATTEND THE PUBLIC WORKSHOPS ON THIS PLAN, OR WHO IN OTHER WAYS HAVE EXPRESSED THEIR CONCERN ABOUT THE FUTURE OF OUR UNIQUE AND BEAUTIFUL AREA.

Special thanks for assistance on this project go to: Michael Scieszka and Sherman Hollander for doing the aerial photograph interpretation and computer mapping; Janet Griffin for word processing assistance; and to Michael Kessler for the report cover design. David Warner provided technical assistance to the Keweenaw County Planning Commission and was the author of the report. Additional thanks go to Sue Crispin of the Natural Features Inventory for authoring the chapter on special natural features of Keweenaw County.

FORWARD

In fall of 1982, Keweenaw County planning officials approached the staff of the Michigan Coastal Management Program seeking assistance with certain local zoning issues along the Lake Superior shoreline. This initial effort led to a proposal to develop a shoreland management plan for Keweenaw County, to be largely supported through coastal management funds. Such a plan would provide direction to local officials in their decision-making with regards to development along the Lake Superior shoreline.

At the beginning of the planning process, it was apparent that very little information was compiled or available on the county's natural resource base. To remedy this situation, base maps and land use/cover maps (based on the interpretation of aerial photographs) were developed on the computer assisted geographic information system operated by the Michigan Resource Inventory Program. With these maps, along with other resource information, as a base, the Lake Superior shoreline of Keweenaw County could now be studied.

Six public workshops were held (two each in the months of June, August and October) by the Planning Commission to establish goals for the shoreland management plan and to make specific development recommendations.

It is intended that this shoreland management plan be only an element of a larger comprehensive plan for the county.

KEWEENAW COUNTY

SHORELAND MANAGEMENT PLAN

PURPOSE

The purpose of the Keweenaw County Shoreland Management Plan is to promote the wise use and management of coastal resources along the county's Lake Superior shoreline. It is intended that this plan be a special element of a larger comprehensive plan for Keweenaw County.

STUDY AREA

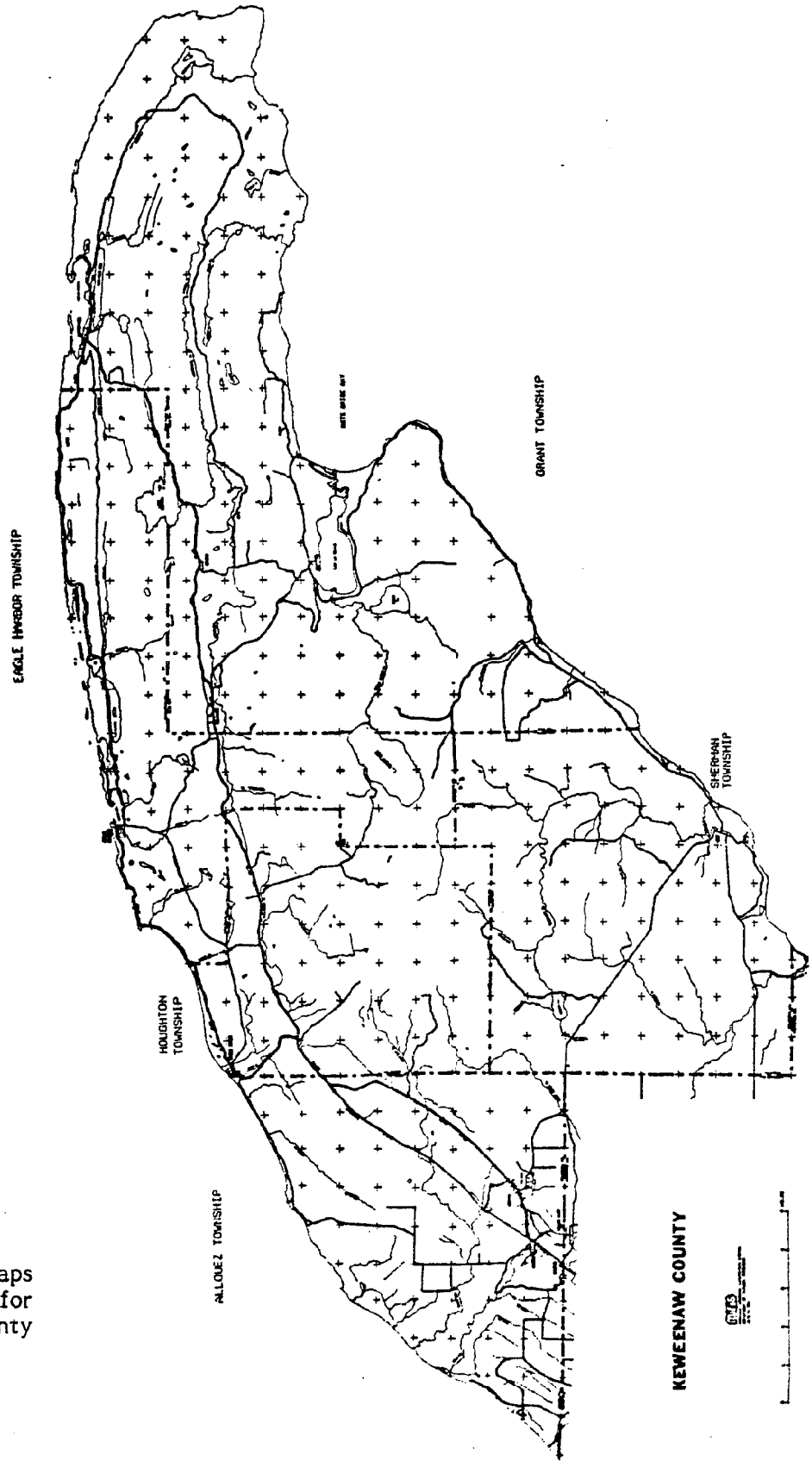
The focus of this plan is on the strip of land bordering the Lake Superior shoreline and leading inland a distance of approximately two miles. Isle Royale, although part of Keweenaw County, was not included in the study area because it is a National Park, owned and administered by the U.S. government, outside of local jurisdiction.

KEWEENAW COUNTY

Keweenaw County is Michigan's northernmost county, and considered by many residents and visitors to be the state's most scenic and beautiful area. The county is bordered on the west, north and east by Lake Superior, and on the south by Houghton County. Keweenaw is characterized by mountains, rocky shores, sand and agate beaches, extensive forests, and numerous historical sites.

HISTORY

The Chippewa (Ojibway) Indians roamed and hunted in the western Upper Peninsula region prior to exploration and settlement by the white man. French missionaries reached the area in the later half of the 17th Century. It wasn't until the early 1800's, however, that significant copper finds were made and reported to the outside



NOTE: Full scale maps are available for viewing at the County Court House.

KEWEENAW COUNTY



world. Mining companies located in the east began to build towns near the copper deposits. In the mid-1800's, the lumber industry began to blossom, providing timber products for the construction of mines and villages. Immigrants from Finland, England, Italy, Sweden and other countries came to the region to work for the mining and logging companies. By the turn of the century, however, this prosperous era began to decline. The lumbermen moved on and by World War I, copper mining was also declining. During the depression, many struggling mines and businesses were forced to close.

Agriculture in Keweenaw County was severely restricted due to unsuitable soil conditions and a short growing season. Other minor industrial developments occurred but were hampered by their remote location and long shipping distances to markets and population centers. In 1968, copper mining halted all together when the Calumet-Hecla Company, after determining that the remaining copper reserves were insufficient to meet the costs of operation. Calumet-Hecla sold all of its holdings to Universal Oil Products, a company interested in land investment and development. Today, Universal Oil Products is the largest single landholder in Keweenaw County.

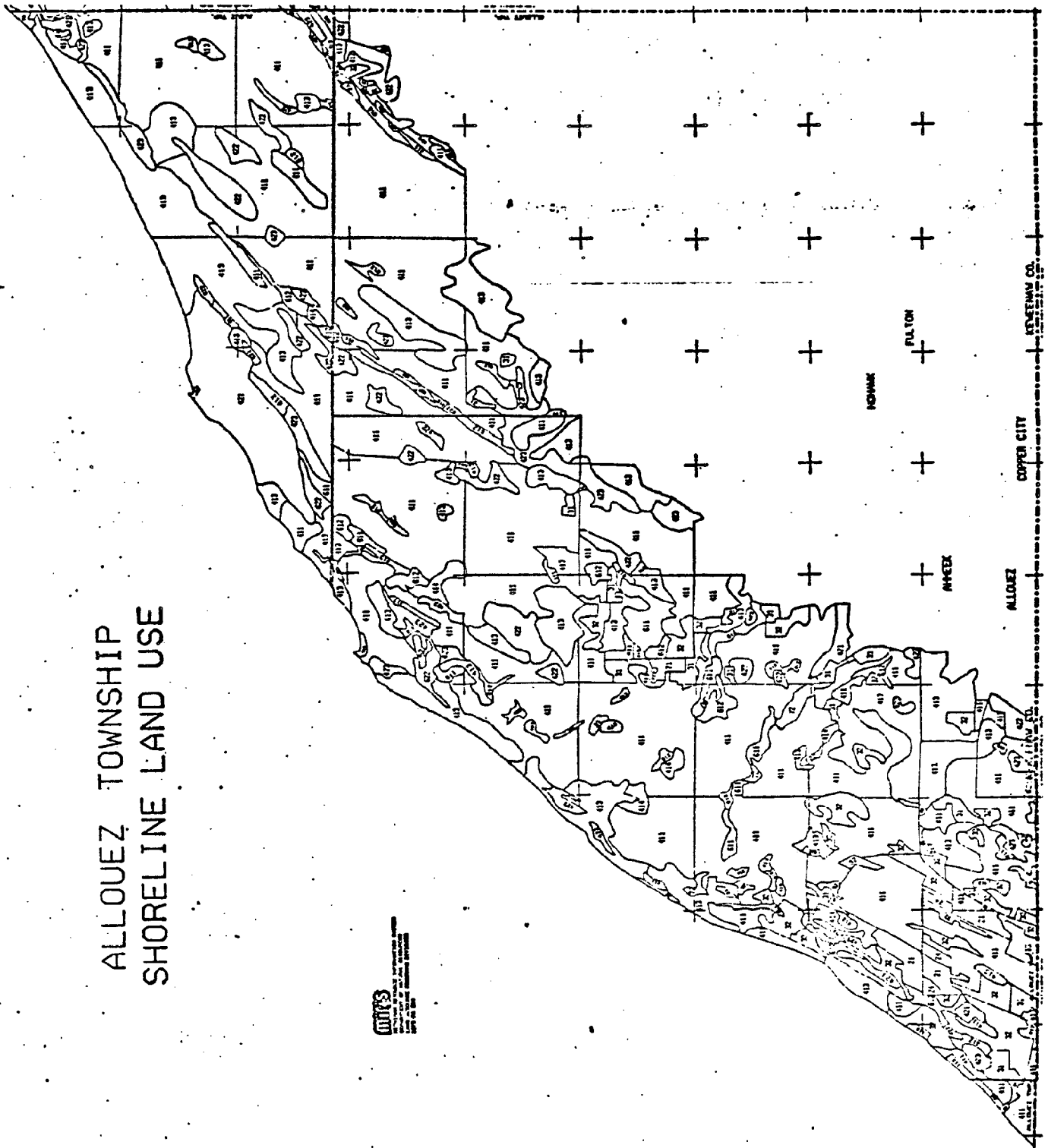
Although the lumbering and wood products industries are beginning to reassert themselves in northern Michigan, for Keweenaw County, the greatest potential for economic development is probably in the recreation and tourist industries. With its numerous unpolluted lakes and streams, waterfalls, extensive forests, mountains, abundant fish and wildlife, unique plant and animal species, spectacular scenic views, and its pleasantly cool summers and snowy winters, Keweenaw County offers a rich diversity of natural resources to support a year-round tourist economy. With proper planning and management, such development can take place without degradation to the resources from overuse or abuse.

KEWEENAW COUNTY POPULATION

According to the Advance Counts for the 1980 Census, Keweenaw County has a population of 1963 (see figure below). Between 1970 and 1980, it is reported that the

ALLOUEZ TOWNSHIP SHORELINE LAND USE

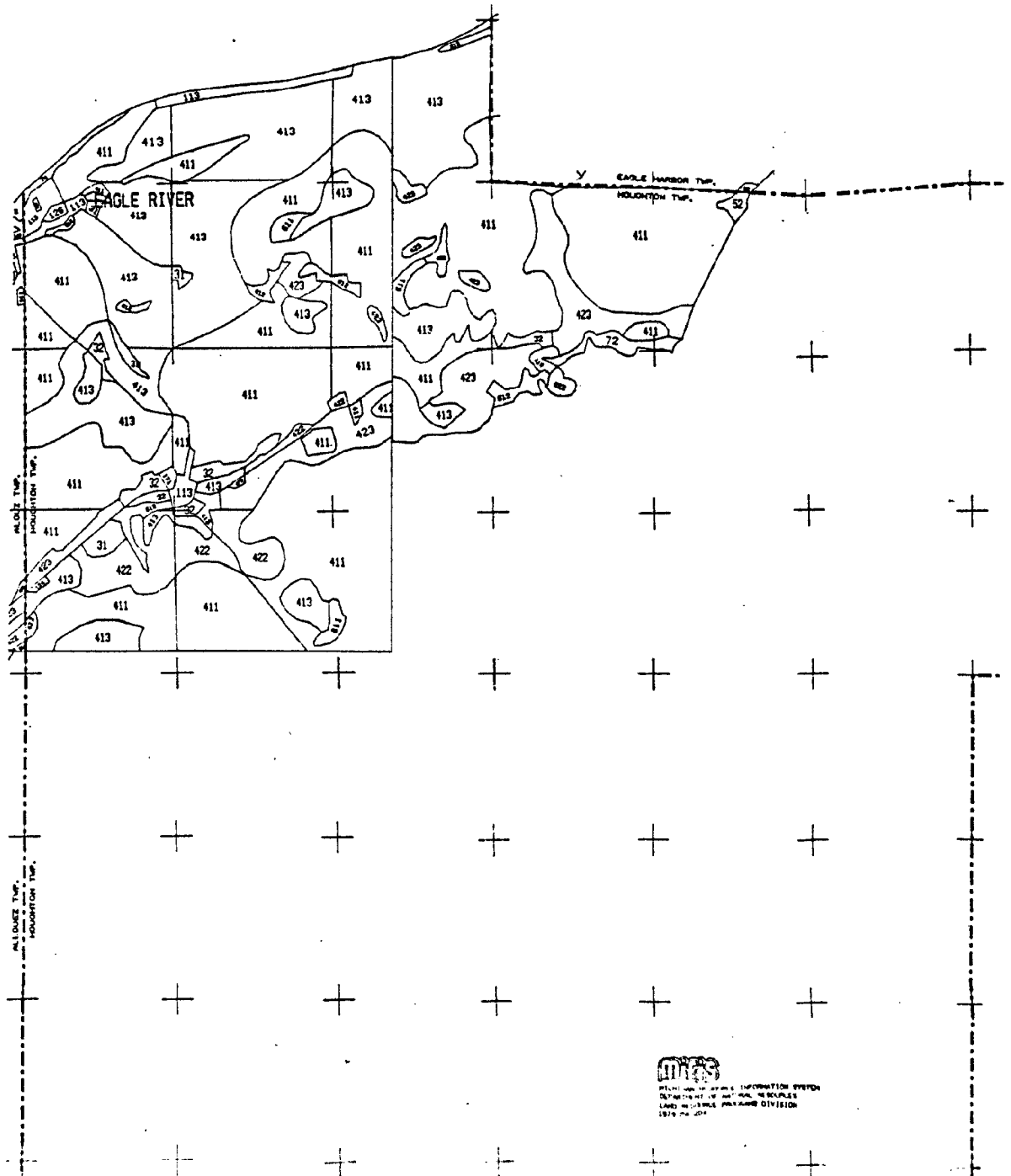
UNIT 3
This map is a reproduction of the original map
which is on file in the County Clerk's Office.
It is not to be used for legal purposes.



NOTE: Full scale maps
are available for
viewing at the County
Court House.

HOUGHTON TOWNSHIP SHORELINE LAND USE

NOTE: Full scale maps
are available for
viewing at the County
Court House.



Eagle Harbor Township

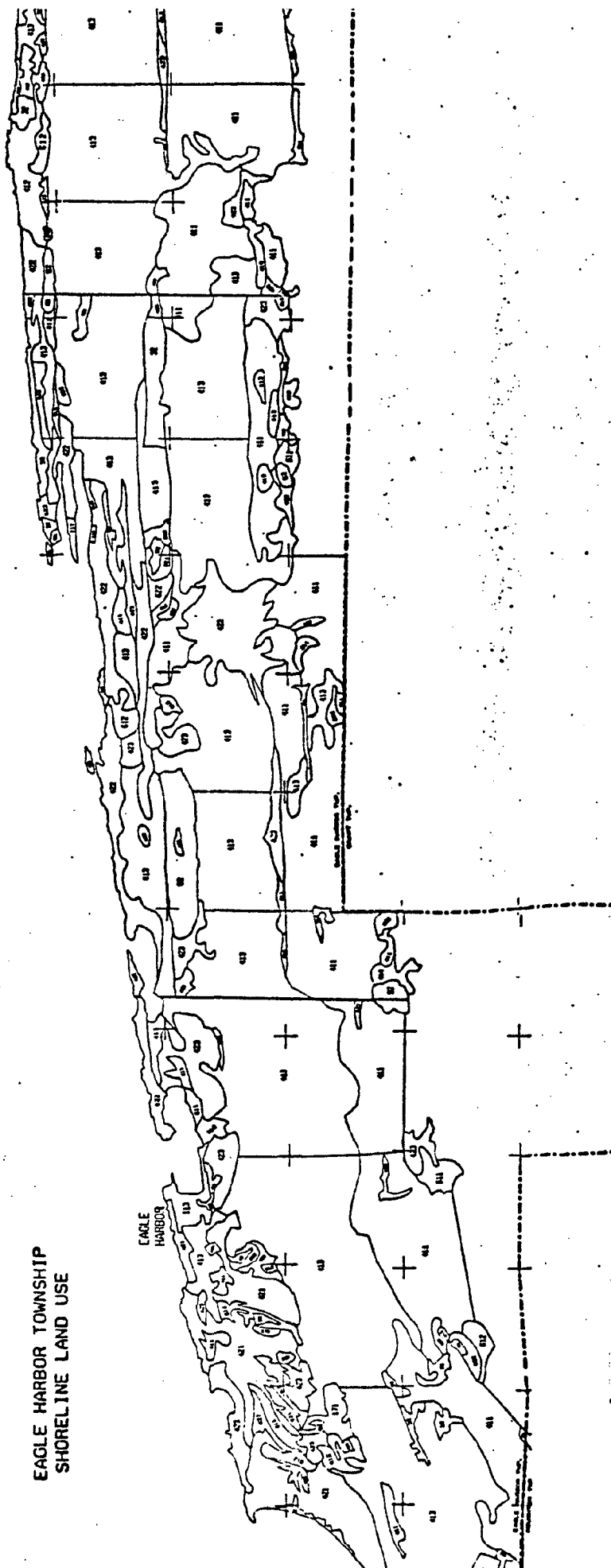
The Eagle Harbor Township shoreline is approximately 26.06 miles in length. It contains a broad stretch of sand dunes and beach at Great Sand Bay, and numerous rocky bays and islands, including Cat Harbor, Eagle Harbor, Grand Marais Harbor, Silver Island and Agate Harbor. The dominant cover type found along the Eagle Harbor Township shoreline is upland conifer forests that change to aspen-white birch forests further inland. In the Village of Eagle Harbor, a lighthouse complex is currently undergoing historic restoration by the County Historical Society. Also in Eagle Harbor is a docking and launching facility operated by the Department of Natural Resources Waterways Division.

Grant Township

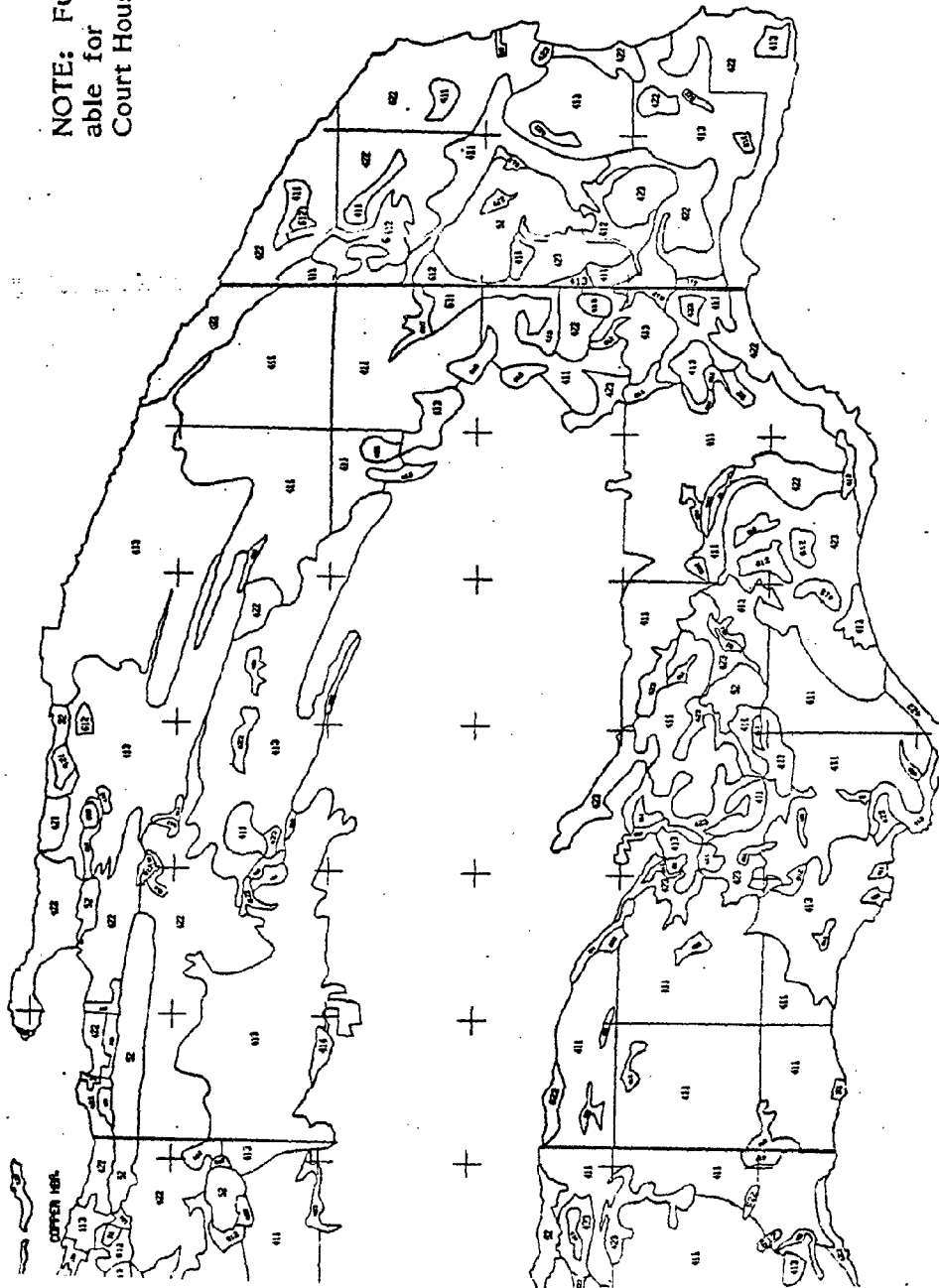
Grant Township has the longest stretch of shoreline in the county at approximately 43.73 miles, excluding Manitou Island. It forms the top of the Keweenaw Peninsula and is the northernmost township in the state. The shoreline is characterized by rocky outcrops and stoney beaches which form numerous broad bays (such as Horseshoe, High Rock, Keystone, Big, Fish Cove and Bete Grise) and headland points (such as Keweenaw Point and Keystone Point). Grant Township's northern shore is dominated by upland conifer forest types that change to aspen-white birch forests further inland. Along the township's southern shore, wooded wetlands are the dominant cover type, changing to northern hardwoods as one moves inland. Manitou Island is dominated by upland conifer forests. Several river mouths are found along the township's shoreline, including those for Union Creek, the Montreal River, the Mendota Canal, the Little and Big Betsy Rivers, and Winters Creek. Copper Harbor is the largest town in the township and contains a lighthouse museum, Fort Wilkins State Park and a state waterways dock and launching facility. Other significant features found along this stretch of shoreline include: Gull Rock Lighthouse west of Manitou Island; the mountainous area along the north shore of Bete Grise Bay; the superb sandy beach on Bete Grise Bay; the Mendota Canal which allows access to Lake Superior from Lac La Belle where there is a waterways boat dock and launch facility; and the extensive wetland and lowland areas around Point Isabelle, which may limit development opportunities.

NOTE: Full scale maps
are available for
viewing at the County
Court House.

EAGLE HARBOR TOWNSHIP
SHORELINE LAND USE

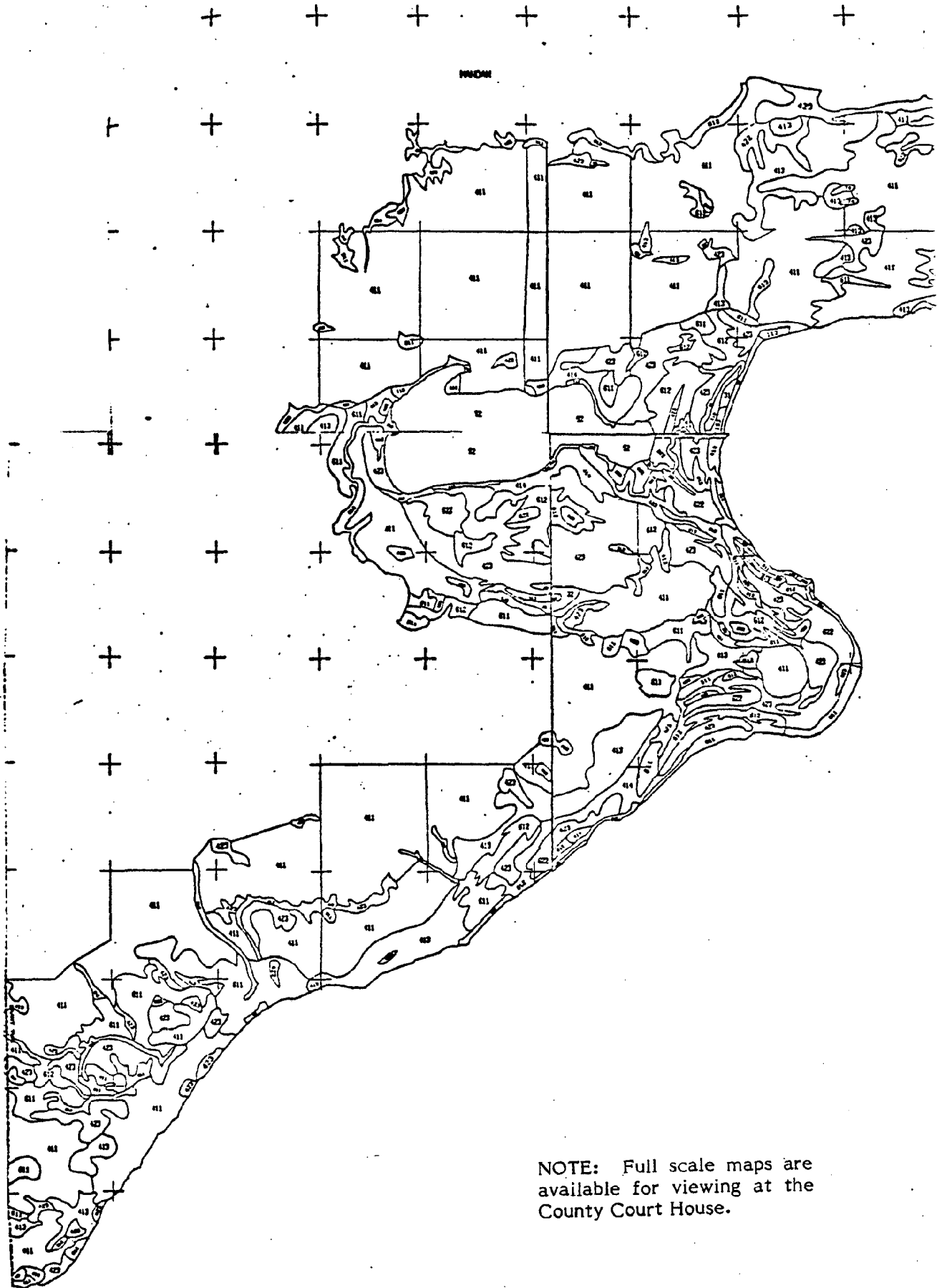


NOTE: Full scale maps are available for viewing at the County Court House.



GRANT TOWNSHIP
SHORELINE LAND USE





NOTE: Full scale maps are available for viewing at the County Court House.

Sherman Township

The Sherman Township shoreline is approximately 7.57 miles in length and is largely dominated by stamp sands which were deposited along the shore by copper mining companies. The stamp sands were originally deposited at the Village of Gay, but due to southerly currents along the peninsula, these sands have been carried and deposited along the shore as far south as the county line near Traverse Bay. Several small lakes have now been formed on the surface of the stamp sands. Although the dominant cover type along the original shoreline is northern hardwood forest, little vegetation is found directly on the stamp sands. Another significant feature along the Sherman Township shoreline is the Tobacco River mouth, which is a popular fishing site during certain times of the year.

NOTE: Land Use/Cover Maps

The land use/cover maps found on these pages were developed through the interpretation of color infrared aerial photographs (1978) and placed on a computer mapping system. The code used is the Michigan Land Cover/Use Classification System, a standardized code being used statewide. The smallest land use category that was broken out on these maps was at least 2.5 acres in size. Therefore, the information provided on the maps is not appropriate for site specific decision-making. Because of the possibility of human or mechanical error in the development of these map products, the total accuracy of the information cannot be assured. Full scale (1" = 2000') copies of the land use/cover maps are available for viewing at the County Court House.

Additional map products can be ordered through the Michigan Resource Information System (MIRIS), Division of Land Resource Programs, Michigan Department of Natural Resources, Box 30028, Lansing, Michigan 48909, 517/373-3328.

KEWEENAW COUNTY SHORELINE MILEAGES*

		<u>Feet</u>	<u>Miles</u>
ALLOUEZ TOWNSHIP			
411	northern hardwood	11481	2.17
113	single family	2963	.56
32	shrubland	1532	.29
72	beach	3671	.70
423	lowland conifers	593	.11
421	pine	8695	1.65
126	institutional	727	.14
	Total Mileage		<u>14.29</u>
HOUGHTON TOWNSHIP			
413	aspen, birch	4934	.93
113	single family	6535	1.24
411	northern hardwood	879	.17
72	beach	4488	.85
	Total Mileage		<u>3.19</u>
EAGLE HARBOR TOWNSHIP			
421	pine	13956	2.64
413	aspen, birch	17407	3.30
423	lowland conifers	9895	1.87
73	sand dunes	4235	.80
113	single family	16730	3.17
612	shrub/scrub wetland	775	.15
611	wooded wetland	2022	.38
422	upland conifers	61165	11.58
411	northern hardwood	883	.17
32	shrubland	10581	2.00
	Total Mileage		<u>26.06</u>
GRANT TOWNSHIP (NORTH SHORE)			
413	aspen-birch	15547	2.94
422	upland conifers	76512	14.49
113	single family	4395	.83
121	business	1290	.24
126	institutional	1002	.19
423	lowland conifers	411	0.84
32	shrubland	3981	.75
421	pine	2119	.40
	Total Mileage		<u>19.92</u>

GRANT TOWNSHIP (SOUTH SHORE)

422	upland conifers	23979	4.54
423	lowland conifers	14535	2.75
413	aspen-birch	26287	4.98
611	wooded wetland	27178	5.15
411	northern hardwood	22654	4.29
31	grassland	705	.13
113	single family	8130	1.54
72	beach	4971	.94
51	waterway	367	.070
414	lowland hardwood	3856	.73
612	shrub/scrub wetland	3605	.68

Total Mileage

25.80

GRANT TOWNSHIP TOTALS

113	single family	12525	2.37
121	business	1290	.24
126	institutional	1002	.19
31	grassland	705	.13
32	shrubland	3981	.75
411	northern hardwood	22654	4.29
413	aspen-birch	41834	7.92
414	lowland hardwood	3856	.73
421	pine	2119	.40
422	upland conifers	100491	19.03
423	lowland conifers	14976	2.84
51	waterway	367	.070
611	wooded wetland	27178	5.15
612	shrub/scrub wetland	3605	.68
72	beach	4971	.94

Total Mileage

45.73 (excluding islands)

SHERMAN TOWNSHIP

411	northern hardwood	8213	1.56
113	single family	3983	.75
413	aspen-birch	2714	.51
423	lowland conifer	1857	.35
171	extractive	8636	1.64
72	beach	14580	2.76

Total Mileage

7.57

ISLANDS

411	northern hardwood	3495	.66
413	aspen-birch	7113	1.35
422	upland conifers	45237	8.57
611	wooded wetland	767	.15

Total Island Mileage

10.73

COUNTY TOTAL MILEAGE: 107.56

includes major islands

96.83 otherwise

**KEWEENAW COUNTY
SHORELINE LAND USE AND COVER TYPES**

* * * * *

<u>Code No.</u>	<u>Land Use/Cover Type</u>	<u>Linear Feet</u>	<u>Miles</u>	<u>Percent of County Shoreline</u>
113	single family residential	42375	8.09	8.5
121	primary business	1290	0.24	0.3
126	institutional	1729	0.33	0.3
31	grassland	705	0.13	0.1
32	shrubland	16094	3.05	3.2
411	northern hardwood	44060	8.34	8.8
413	aspen-birch	112648	21.33	22.4
414	lowland hardwood	3856	0.73	0.8
421	pine	24770	4.69	4.9
422	upland conifer	161656	30.62	32.2
423	lowland conifer	27321	5.18	5.4
51	waterways	367	0.07	0.07
611	wooded wetland	29200	5.53	5.8
612	shrub/scrub wetland	4380	0.83	0.9
72	beach	27710	5.25	5.5
73	sand dune	4235	0.8	0.8
			<u>95.21</u>	<u>100.0</u>

*These are linear measurements of land use and cover types found along the Lake Superior shoreline. The linear distances were measured by computer and represent only approximations of the actual distances.

LAND USE/COVER TYPE DEFINITIONS

The following definitions were taken from the Michigan Land Cover/Use Classification System and further refined by the Michigan Resource Inventory Program. This uniform code is being used statewide for land use/cover type inventories.

URBAN AND BUILT UP LANDS

Urban or built up land is comprised of areas of intensive use with much of the land covered by structures. Included in this category are cities, villages, strip developments along highways, transportation, power and communications facilities, and areas such as those occupied by mines and quarries, shopping centers, industrial and commercial complexes, and institutions that may, in some instances, be isolated from urban areas.

As development progresses, land having less intensive use may be located in the midst of urban or built-up areas and will generally be included in this category. Agricultural land, forest, wetland, or water areas on the fringe of urban or built-up areas will not generally be included. The urban or built-up category takes precedence over others when the criteria for more than one category are met. For example, residential areas that have sufficient tree cover to meet forest land criteria will be placed in a residential category.

113 Single family/duplexes

This category includes areas having detached single and two-family structures generally containing an average gross density of no more than six dwelling units per acre (15 units per hectare). Lawns, drive ways and associated structures such as garages, tool sheds, garden sheds, etc., should be included in the 113 category.

121 Primary/central business district

The 121 category should be used to identify the main commercial service center in the community. The uses included in this class are retail establishments and the businesses, financial, professional and repair services of the area. The 121 category often contains institutional uses such as governmental offices, churches and schools. These should not be separated out unless they exceed approximately one-third of the area.

126 Institutional

Education, government, religious, health, correctional and military facilities are found in this category. All buildings grounds and parking lots that compose the facility are included within the institutional class. Small institutional units in developed areas that do not meet the one to two hectare minimum size standard should be placed within the adjacent categories which are usually residential or commercial.

EXTRACTIVE

Extractive mineral land encompasses both surface and subsurface mining operations. Surface structure and equipment operations utilizing large power shovels and production trucks, installed primary crushers, concentrating or processing plants, stockpiles, maintenance buildings, waste dumps, tailings basins and parking lots are included.

171 Open pit

Extractive activities which are primarily carried out upon the surface of the earth through the creation of a large pit.

NONFORESTED LANDS

Nonforested land (open land, rangeland) is defined as areas supporting early stages of plant succession consisting of plant communities characterized by grasses or shrubs.

In cases where there is obvious evidence of seeding, fertilizing or other cultural practices, these areas should be mapped as cropland or permanent pasture.

31 Herbaceous openland

Herbaceous openlands (prairies, grassland, rangeland) are dominated by grasses and forbs. Such areas are often subjected to continuous disturbance such as mowing, grazing or burning to maintain the herbaceous character. Typical plant species are quackgrass, Kentucky bluegrass, upland and lowland sedges, reed canary grass and clovers.

32 Shrubland

Shrublands are dominated by native shrubs and low woody plants. If left undisturbed such areas are soon dominated by young tree growth. Typical shrub species include blackberry and raspberry briars, dogwood, willow, sumac and tag alder.

FOREST LAND

Forest lands are lands that are at least ten percent stocked by forest trees or any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest land can generally be identified rather easily from high altitude imagery. On some lands there may be large areas that have little or no visible forest growth. Lands such as these on which there is forest rotation (involving clear cutting and regeneration) should be classified under the forest land category. Lands that meet the criteria for forest land and also are being used for a higher category should be placed in the higher category (urban and built-up, agricultural or nonforested).

411 Northern hardwood

Areas throughout Michigan where the following species predominate or are inter-mixed -- sugar and red maple, elm, beech, yellow birch, cherry, basswood and white ash.

413 Aspen, white birch and associated species

The 413 category should be used to map the trembling aspen, bigtooth aspen, white birch and related species.

414 Lowland hardwoods

Ash, elm and soft maple along with cottonwood, balm-of-Gilead and other lowland hardwoods will be mapped through this category.

421 Pine

Those forests where white, red, jack and scotch pine predominates

422 Other upland conifers

The 422 category should be used to map white or black spruce, balsam or douglas fir along with areas covered by larch and hemlock.

423 Lowland conifers

This lowland species category includes areas of predominantly cedar, tamarack, black and white spruce and balsam fir stands.

WATER BODIES**51 Streams and waterways**

This category includes rivers, strams, creeks, canals, drains, and other linear bodies of water. Intermittent streams which flow in wet seasons but are dry during dry seasons should be classified as streams if they are water covered the majority of the time. Ephemeral streams which carry surface runoff during and immediately after periods of precipitation or snow melt should not be classified as streams. These areas generally have no permanent or well-defined channels but follow slight depressions in the natural contour of the ground surface. Where the water course is interrupted by

a control structure which creates an impoundment, the impounded area should be classified as a reservoir. The boundary between streams and lakes, or reservoirs, is the straight line across the mouth of the stream. The St. Mary's, St. Clair and Detroit rivers are classified as Great Lakes connecting waterways.

WETLANDS

611 Wooded wetland

This class applied to wetlands dominated by trees more than 20 feet tall. The soil surface is seasonally flooded with up to 12 inches of water. Several levels of vegetation are usually present, including trees, shrubs and herbaceous plants. Some of the predominate tree species include: ash, elm, red maple, cedar, black spruce, tamarack and balsam fir.

612 Shrub/scrub wetland

This class applies to wetlands dominated by woody vegetation less than six meters tall. Vegetation includes shrub and small or stunted trees. This class includes both stable shrub wetlands and areas in a successional stage leading to wooded wetlands. Some of the predominate species include: alder, dogwood, sweetgale, leatherleaf, willow-buttonbush associations and water willow. Any standing dead trees, shrubs and stumps should be placed in the 612 category.

BARREN LAND

Barren land is land of limited ability to support life and little or no vegetation. Land temporarily barren owing to man's activities and where it may be reasonably inferred that the land will be returned to its former use, it is included in one of the other categories.

72 Beaches and riverbanks

The 72 category should be used to map sloping accumulations of exposed sand and gravel along shorelines.

73 Sand dunes

The 73 category should be placed on the delineations of hills, mounds or ridges of wind blown sand in a primarily unvegetated condition.

SPECIAL NATURAL FEATURES OF KEWEENAW COUNTY

Keweenaw County has a wealth of natural diversity--perhaps as much as any other county in Michigan. Among its outstanding natural features are dramatic geological formations, virgin forests, and rare plant and animal species. The Michigan Natural Features Inventory maintains records on five major types of natural features which are of special conservation interest in the state; they are special plants, special animals, outstanding plant communities, unusual geological features, and miscellaneous special features such as champion trees and great blue heron rookeries. Keweenaw County's special features are described below according to these categories.

Special Plants

Within Keweenaw County grow more plant species of special concern, threatened and endangered status than in any other Michigan county. These rarities fall into two major groups. One group consists of plants which normally grow in Arctic regions, far to the north of Michigan; however, because of the cool, moist effect of Lake Superior, these plants are able to survive in the Keweenaw, far south of their ordinary ranges. Some occur only on Isle Royale, but many also grow on the Keweenaw Peninsula, especially along the rocky Lake Superior shore. The second category of rare and unusual plants in the Keweenaw includes the "western disjuncts"--plants which grow primarily in the Rocky Mountains of the Pacific Northwest, but for some yet unknown reason are surprisingly "disjunct" (growing far away from their normal ranges) in the Lake Superior region. Keweenaw County's only endangered plant--Chamaerhodos nuttallii, a plant hardly bigger than its name--is one of these "western disjuncts", as are several other plants of the rocks shorelines, treeless ridgetops and rich forests.

Special Animals

Most of Keweenaw County's special animal species are confined to Isle Royale National park. On the peninsula itself, there are four historic eagle nests, though none have been active in the last two years. However, bald eagles--and possibly ospreys--should return to the Keweenaw as their numbers increase throughout the state thanks to successful conservation efforts.

Plant Communities

Despite great changes in the natural vegetation of the Keweenaw following settlement, the best examples of certain natural communities are found here. It is assumed that the forests of much of the Upper Peninsula were cut and burned--more than once in some areas--and Keweenaw County suffered the same. Still, there exist a few tracts of uncut or at least mature timber, the most significant and famous of which is the Estivant Pines, a virgin forest of the dry-mesic northern type, about 40 percent of which is protected.

The same coastal factors responsible for rare arctic plants foster a type of forest similar to that found in the boreal (northern) region of Canada, which enters the United States only in Michigan, northern Minnesota, and New England. Because it is surrounded by Lake Superior, the Keweenaw once had extensive boreal forests, mostly growing in a half-mile wide strip along the coast. Though most have been cut and burned, some stands are in an original, near-original, or recovered condition, and are thus exemplary in the state.

Some aquatic habitats in the Keweenaw are in more pristine condition than elsewhere in the state because of their remoteness. Especially noteworthy are the several large exemplary oligotrophic (low nutrient) lakes in the eastern portion of the peninsula which have scarcely a cottage on them.

The most outstanding plant communities in the Keweenaw occur on exposed bedrock, which has been protected from or tolerant of fire. The state's largest and most diverse examples of bedrock beach are found in the Keweenaw, especially around Horseshoe Harbor and from Agate Harbor to Copper Harbor. Northern balds--treeless ridgetop communities created by high winds and other unusual environmental factors--have their best representative in Mount Lookout. Only seven other state locations exist for this rare natural community; both Brockway Mountain and those in the Porcupine Mountains have been greatly altered, and two others in the Keweenaw are very small. A third bedrock community type--bedrock glade--resembles the northern bald, but supports more trees and is caused by heat and drought. There are a number of good examples of bedrock glade in the northwestern Upper Peninsula, with Mount Houghton, Bear Bluff, Mount Bohemia and Fish Cove Knob among the best. Last of the Keweenaw's bedrock communities are the cliffs, occurring in various settings throughout the peninsula, the most spectacular of which form the escarpments along the "spine" of the peninsula.

Geologic Features

The Keweenaw's geologic diversity is one of its most outstanding scenic attractions. From the great ridges of ancient Precambrian rock, one can obtain magnificent views of the peninsula. Other, less dramatic features are no less unique and interesting in geological terms, however. Along the rocky shore are excellent examples of sea stacks and other unusual erosion features, ripple marks representing pre-historic lakebeds, tilted bedrock of the great Lake Superior Syncline which forms both the peninsula and Isle Royle, fossils of the earliest living plants, the remnants of ancient lava flows, and some of the oldest rocks in North America. Inland is found a famous esker--glacial riverbed turned rocky ridge--which winds past Delaware.

Miscellaneous Special Features

One of the most renowned of Keweenaw County's special features is the state champion and near-national champion white pine--the "Leaning Giant"--at the Estivant Pines Nature Sanctuary. The county also has the recognized state champion specimens of the roundleaf shadbush and the fleshy haw. The county's only known blue heron rookery is in Isle Royale National Park.

Conservation of these special natural features for future generations can take many forms, from a strategy of avoiding human disturbance, to active management which might include mowing, burning or selective cutting. Fragile features maintained by natural environmental conditions--e.g., ridgetop balds or aquatic habitats--would benefit most from the "hands-off" strategy. Active management can be beneficial to species and communities which thrive at certain stage in ecological succession. For instance, the threatened plants wild-lilac and heart-leaved arnica have benefitted from mechanical clearing of roadsides and powerline rights-of-way, which reduces competition from other species.

Several nature preserves have been established in Keweenaw County to help protect some of its special natural features. The Michigan Nature Association currently owns nine preserves, the Nature Conservancy has one, and the U.S. government holds the largest--Isle Royale National Park, most of which is designated federal wilderness. Nonetheless, these preserves in themselves do not ensure the conservation of the county's rich natural diversity.

Of the special features inventoried by the Michigan Natural Features Inventory, only endangered and threatened species are protected by law. Permits may be obtained for actions affecting threatened species; although permits are normally not issued for endangered species, only one such species--Chamaerhodos nuttallii--occurs in the county. The legal protection afforded endangered and threatened plants via the Endangered Species Act of 1974 is not to be confused with Michigan's wildflower protection law (the Christmas Greens Act of 1962) which forbids the removal of some attractive--though mostly common--plants (e.g., orchids, gentians, clubmosses) from state land and from private land without permission of the landowner. Wildflowers protected by the latter law are not represented by Natural Features Inventory records.

For additional information contact: Michigan Natural Features Inventory, Department of Natural Resources, Division of Land Resource Programs, P.O. Box 30028, Lansing, Michigan 48909, 517/373-1552.

Element List

<u>TYPE</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
***** KEWEENAW PENINSULA *****		
A	Haliaeetus Leucocephalus	Bald Eagle
C	Inland Oligotrophic Lake	
C	Dry Mesic Northern Forest	
C	Northern Bald	
C	Bedrock Beach	
C	Calcareous Open Cliff	
G	Late Precambrian Earth History	Brockway Mountain
G	Modern Coastal Features	Devil's Washtub
G	Unperched Dunes	Great Sand Dunes
G	Esker	Delaware Esker
G	Primary Sedimentary Structure	
G	Tilted Bedrock	Horseshoe Harbor
O	Amelanchier Sanguinea	Roundleaf Shadbush
O	Crataegus succulenta	Fleshy Haw
O	Pinus Strobus	White Pine
O	Sambucus Pubens	Red-Berried Elder
P	Arnica Cordifolia	Heart-Leaved Arnica
P	Aster Modestus	(An) Aster
P	Lactuca Pulchella	Blue Lettuce
P	Senecio Indecorus	(A) Ragwort
P	Solidago Decumbens	(A) Goldenrod
P	Braya Humilis	No Common Name

P	<i>Draba Arabisans</i>	No Common Name
P	<i>Arenaria Macrophylla</i>	(A) Sandwort
P	<i>Sagina Nodosa</i>	Pearlwort
P	<i>Callitriche Hermaphroditica</i>	(A) Water-Starwort
P	<i>Callitriche Heterophylla</i>	(A) Water-Starwort
P	<i>Lonicera Involucrata</i>	A Fly-Honeysuckle
P	<i>Drosera Anglica</i>	(A) Sundew
P	<i>Empetrum Nigrum</i>	Black Crowberry
P	<i>Pterospora Andromedea</i>	Pine-Drops
P	<i>Vaccinium Caespitosum</i>	Dwarf Bilberry
P	<i>Gentiana Linearis</i>	(A) Closed Gentian
P	<i>Myriophyllum Alterniflorum</i>	(A) Water-Milfoil
P	<i>Myriophyllum Farwellii</i>	(A) Water-Milfoil
P	<i>Pinguicula Vulgaris</i>	Butterwort
P	<i>Littorella Americana</i>	No Common Name
P	<i>Clematis Verticillaris</i>	Purple Clematis
P	<i>Ceanothus Sanguineus</i>	(A) Wild-Lilac
P	<i>Chamaerhodos Nuttallii</i> var. <i>Keweenawensis</i>	No Common Name
P	<i>Potentilla Pensylvanica</i>	A Cinquefoil
P	<i>Castilleja Septentrionalis</i>	Northern Paintbrush
P	<i>Collinsia Parviflora</i>	Small Blue-Eyed Mary
P	<i>Carex Arcta</i>	(A) Sedge
P	<i>Carex Davisii</i>	(A) Sedge
P	<i>Carex Media</i>	(A) Sedge
P	<i>Carex Richardsonii</i>	(A) Sedge
P	<i>Carex Rossii</i>	(A) Sedge
P	<i>Carex Scirpoidea</i>	(A) Sedge
P	<i>Scirpus Torreyi</i>	(A) Bulrush
P	<i>Allium Schoenoprasum</i>	Chives
P	<i>Calypso Bulbosa</i>	Calypso or Fairy-Slipper
P	<i>Listera Auriculata</i>	Auricled Twayblade
P	<i>Agropyron Spicatum</i>	Bluebunch Wheatgrass
P	<i>Calamagrostis Lacustris</i>	(A) Reed Grass
P	<i>Calamagrostis Stricta</i>	(A) Reed Grass
P	<i>Danthonia Intermedia</i>	(A) Wild Oat Grass
P	<i>Muhlenbergia Cuspidata</i>	(A) Muhly Grass
P	<i>Phleum Alpinum</i>	Mountain Timothy
P	<i>Poa Alpina</i>	(A) Grass
P	<i>Poa Paludigena</i>	Marsh Bluegrass
P	<i>Trisetum Spicatum</i>	(A) Grass
P	<i>Agropyron Spicatum</i>	Bluebunch Wheatgrass
P	<i>Pellaea Atropurpurea</i>	Purple Cliff-Brake
P	<i>Asplenium Montanum</i>	Mountain Spleenwort
P	<i>Camptosorus Rhizophyllus</i>	Walking Fern
P	<i>Dryopteris Filix-Mas</i>	Male Fern
P	<i>Woodsia Alpina</i>	Northern Woodsia
P	<i>Woodsia Obtusa</i>	Blunt-Lobed Woodsia
P	<i>Dryopteris Filix-Mas</i>	Male Fern
P	<i>Equisetum Telmateia</i>	Giant Horsetail
P	<i>Lycopodium Selago</i>	Fir Clubmoss

***** ISLE ROYALE *****

A	Pandion Haliaetus	Osprey
A	Coregonus Bartletti	Siskiwitt Lake Cisco
A	Pseudacris Triseriata Maculata	Boreal Chorus Frog
A	Canis Lupus	Gray Wolf
A	Felix Lynx	Lynx
A	Alces Alces	Moose
G	Early Precambrian Earth History	Greenstone Ridge
G	Extrusive Igneous	
G	Tilted Bedrock	Greenstone Ridge
O	Rookery - Ardea Herodias	Great Blue Heron Rookery
P	Oplopanax Horridus	Devil's-Club
P	Antennaria Rosea	A Pussytoes
P	Aster Modestus	(An) Aster
P	Lacutca Pulchella	Blue Lettuce
P	Senecio Indecorus	(A) Ragwort
P	Braya Humilis	No Common Name
P	Draba Arabisans	No Common Name
P	Draba Incana	No Common Name
P	Subularia Aquatica	Alwort
P	Arenaria Macrophylla	(A) Sandwort
P	Sagina Nodosa	Pearlwort
P	Callitriche Hermaphroditica	(A) Water-Starwort
P	Lonicera Involucrata	(A) Fly-Honeysuckle
P	Viburnum Edule	Squashberry or Mooseberry
P	Drosera Anglica	(A) Sundew
P	Empetrum Nigrum	Black Crowberry
P	Vaccinium Uliginosum	Alpine Blueberry
P	Vaccinium Vitis-Idaea	Mountain-Cranberry
P	Myriophyllum Alterniflorum	(A) Water-Milfoil
P	Phacelia Franklinii	(A) Phacelia
P	Pinguicula Vulgaris	Butterwort
P	Nymphaea Tetragona	Water-Lily
P	Polygonum Viviparum	Alpine Bistort
P	Ranunculus Macounii	(A) Buttercup
P	Ranunculus Rhomboideus	Prairie Buttercup
P	Potentilla Pensylvanica	(A) Cinquefoil
P	Saxifraga Aizoon	Yellow Mountain Saxifrage
P	Saxifraga Tricuspidata	(A) Saxifrage
P	Castilleja Septentrionalis	Northern Paintbrush
P	Collinsia Parviflora	Small Blue-Eyed Mary
P	Euphrasia Arctica	(An) Eyebright
P	Carex Atratiformis	(A) Sedge
P	Carex Media	(A) Sedge
P	Luzula Parviflora	Small-Flowered Wood-Rush
P	Allium Schoenoprasum	Chives
P	Tofieldia Pusilla	(A) False Asphodel
P	Orchis Rotundifolia	Small Round-Leaved Orchis
P	Listera Auriculata	Auricled Twayblade
P	Beckmannia Syzigachne	(A) Slough Grass
P	Calamagrostis Lacustris	(A) Reed Grass
P	Poa Alpina	(A) Grass
P	Poa Canbyi	(A) Grass

P	Cryptogramma Acrostichoides	American Rock-Brake
P	Cryptogramma Stelleri	Slender Cliff-Brake
P	Dryopteris Assimilis	(A) Shield-Fern
P	Dryopteris Filix-Mas	Male Fern
P	Lycopodium Selago	Fir Clubmoss

Michigan's Two Major Wild Plant Protection Laws

Invariably in May, when large white trilliums (Trillium grandiflorum) are almost leaping up out of the woods and spilling out onto the roads, some semi-informed newscaster will smilingly focus on them and offer a comment such as: "...and I understand that they are rare in Michigan." Such observations--amusing, if not somewhat disconcerting to the serious--are understandable when one considers that the public has for some time now been subjected to "buzz-words" like: protected, rare, threatened, endangered and "of special concern". Confusion results from the legal terminology embodied in Michigan's two major laws concerning wild plants: The Michigan Christmas Greens Act and Wildflower Protection Law (1943, 1962) and the Endangered Species Act (1974). Each offers a differing degree of concern for two separate, but sometimes overlapping, groups of plants. As George Thomas, of the Southeastern Chapter of the Michigan Botanical Club, aptly put it: "PA 182 (1962), the Christmas Greens and Wildflower Protection Act, declares that it is public policy to protect attractive plants from overzealous collectors and commercial exploitation...and to prevent their becoming rare. This purpose should be distinguished from that of the Endangered Species Act...which protects plants which have already reached rarity status and require special recovery programs."

The former act covers "Christmas trees, evergreen boughs, other trees, shrubs and vines, and 'certain native plants.'" Many of these "certain native plants" are also covered by the latter act; but some, in no way endangered or threatened in the state, are legally protected because their attractiveness has been construed as inviting exploitation. And this must indeed have been the case as early as 1933, when Christmas trees, bittersweet, native holly, etc. were being ripped off public and private lands for decorative purposes. Times have changed; exploitation is now more subtle and sophisticated. Only last year several plants of the precariously rare prairie white fringed orchid (Habenaria leucophaea) were "lifted", obviously not for Christmas decoration.

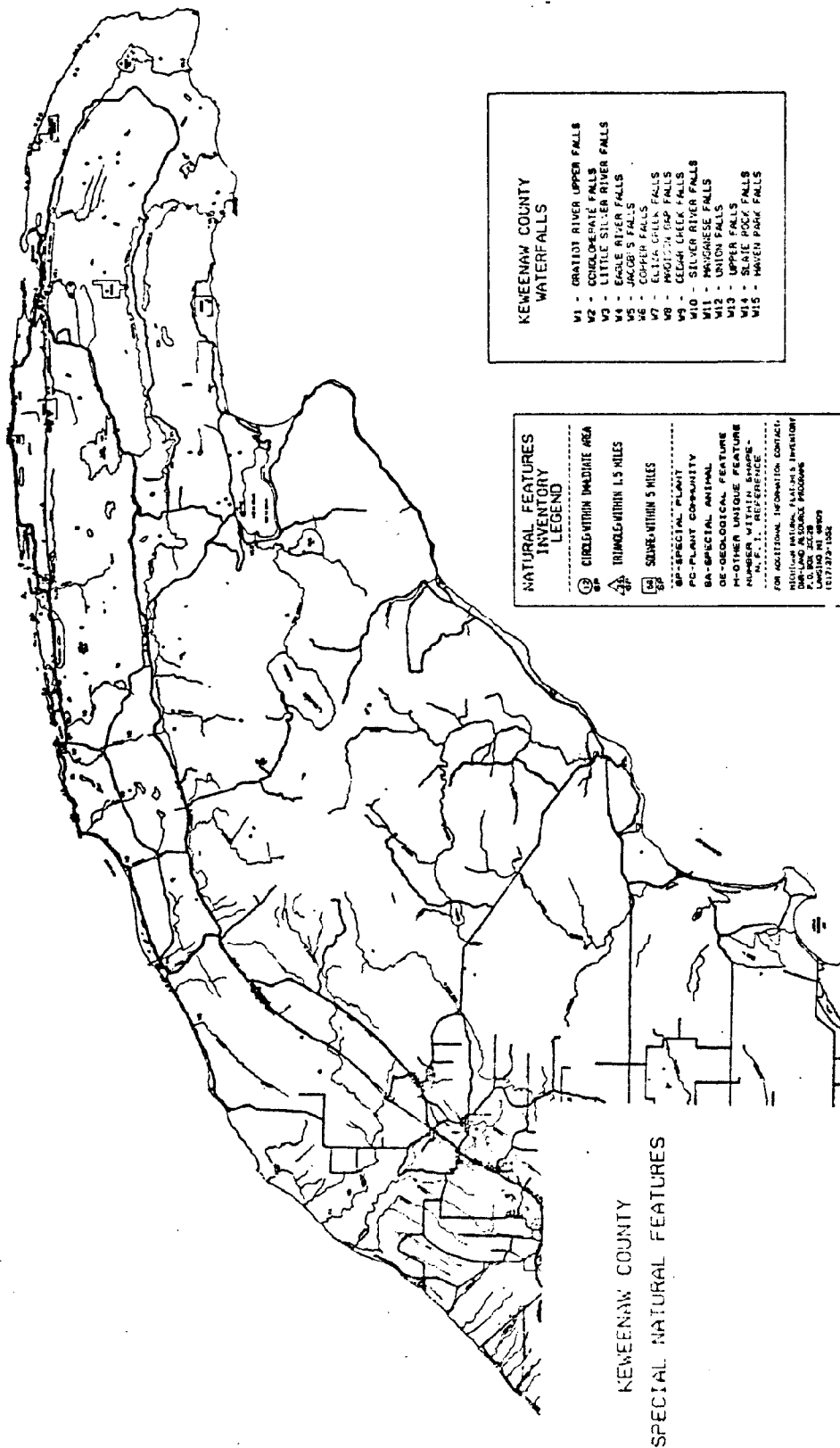
Approximately 340 native Michigan plant species are now listed as either endangered, threatened or of special concern. Only plants in the first two categories are protected by the Michigan Endangered Species Act. "Endangered" status confers the greatest protection to a plant in that a permit must be obtained each time a plant or colony of plants is taken. Only 13 species which are regionally rare and near extinction in Michigan have been assigned this status. The 223 "threatened" plants are also protected through a permitting program, though annually renewable permits are available for taking these species. Plants which are not "endangered" or "threatened" in Michigan but are extremely uncommon and deserve further study and monitoring are assigned "special concern" status (Wagner et al., 1977; Mich. Bot. 16:100). This last category was formerly called "rare". But as that term applies in effect to the whole bunch, it was decided by the Technical Advisory Committee to introduce the term "special concern".

So when the exclamation is sounded, "look at those white trilliums...they're very rare, you know", calmly explain that plants can be protected without necessarily being rare.

Waterfalls

Keweenaw County, due to its steeply sloping topography and numerous bedrock outcrops, has a number of scenic waterfalls. It may be important to know the locations of these waterfalls because of their unique beauty and attractiveness to visitors and residents alike, as well as to protect them from degradation. Several waterfalls are noted on the special natural features map.

NOTE: Full scale maps are available for viewing at the County Court House.



THE KEWEENAW COUNTY VOTER SURVEY

In June 1981, a team from Michigan Technological University's Bureau of Industrial Development, under the direction of Dr. Alan J. Brokaw, conducted an attitude survey of registered voters in Keweenaw County to develop information that would be useful to local elected officials. The three part survey asked voters how they felt on a variety of local issues, on how local government funds should be spent, and on general demographic questions. Although the response rate was only 53 percent, the sample appears to be generally representative of the county population.

Several findings of the attitude survey relate directly to this shoreland management planning effort. The overriding conclusion of the survey is that the residents of Keweenaw County favor new development that creates jobs while preserving the natural beauty of the county. Also, many specific questions related in some way to the county's Lake Superior shoreline evoked strong responses.

- 1) "Public Access to Lake Superior Beaches Should be Preserved." 89.9 percent of the respondents either agreed or strongly agreed with this statement.
- 2) "The County Should Try to Get More Government Grants." 69.2 percent of the respondents either agreed or strongly agreed with this statement.
- 3) "The County Needs More Jobs Based on Wood and Forest Products." 78.9 percent of the respondents either agreed or strongly agreed with this statement.
- 4) "The County Needs to Promote More Winter Tourism in the County." 71.9 percent of the respondents either agreed or strongly agreed with this statement.
- 5) "The County Needs to Promote More Summer Tourism in the County." 73.7 percent of the respondents either agreed or strongly agreed with this statement.
- 6) "The County Should Encourage the Building of a Downhill Ski Resort in the County." 57.5 percent of the respondents either agreed or strongly agreed with this statement.

- 7) "Extended Winter Navigation of Lake Superior Should be Encouraged." 53.5 percent of the respondents either disagreed or strongly disagreed with this statement.
- 8) "The County Should Develop a Formal Long-Range Development Plan." 61 percent of the respondents either agreed or strongly agreed with this statement.
- 9) "The County Should Develop a Zoning Ordinance to Control Land Use." 48.3 percent of the respondents either agreed or strongly agreed with this statement, while 25.8 percent remain neutral.
- 10) "The Environmental Beauty of Keweenaw County Must be Preserved." 84.9 percent of the respondents either agreed or strongly agreed with this statement.
- 11) "I Live in Keweenaw County Because of its Beauty and Purity." 76.5 percent of the respondents either agreed or strongly agreed with this statement.
- 12) "Shoreline Erosion is a Serious Problem in the County." 49.4 percent of the respondents either agreed or strongly agreed with this statement, while 31.8 were neutral.
- 13) "A County Wide Land Use Plan Should be Developed." 46.5 percent of the respondents either agreed or strongly agreed with this statement, while 31.2 percent remained neutral and only 17.1 percent disagreed.
- 14) "Development Should not be Allowed in Some Parts of the County." 45.1 percent of the respondents either agreed or strongly agreed with this statement, while 31.5 percent remained neutral and only 16.6 percent were negative.

Along with this last statement, the respondents were asked to list areas in the county where development should not be allowed. The areas mentioned most frequently are listed below:

- 1) Bete Gris
- 2) Lake Shore Property
- 3) Keweenaw Point
- 4) Five Mile Point
- 5) Seven Mile Point
- 6) Mt. Bohemia
- 7) Mouth of the Tobacco River
- 8) Mouth of the Montreal River
- 9) Brockway Drive

Some respondents generally thought that the entire county should not be developed, while some others felt that development should not be banned anywhere in the county.

One other question on the survey that relates to shoreland planning is one that asked if either more or less local money should be spent on buying shoreland to ensure public access. Out of 30 items that respondents had a chance to react to, buying shoreland was the seventh most popular answer for spending local government funds.

In conclusion, the survey results tend to support many points: that public access to Lake Superior should be maintained and expanded; that more should be done to promote tourism; that planning and zoning are desirable; and that the environment of the county should be preserved.

Although this voter survey should not be the sole source of information upon which to base local public policy, the information does give some general indications on how county residents feel about certain issues. In regards to the Shoreland Management Plan, the responses to shoreland, recreation and land use issues should be taken into consideration by the Planning Commission when developing planning goals and objectives.

SHORELAND DEVELOPMENT LIMITATIONS AND OPPORTUNITIES

Today, the scenic beauty of the Lake Superior shoreline is probably Keweenaw County's greatest asset in terms of economic development. However, that has not always been true. In the past, the county's economy depended on the copper mining industry and later the lumbering industry. However, today, very little, if any, copper mining is currently being done in the county and a future resurgence in the near future seems unlikely. Timber-related industries appear to be working only on a small scale compared to the lumbering booms of the late 1800s. Currently, the wood products industry has shown some signs of new life, and the industry may become a major employer in the county in the future.

Forestry Potential

In the late 1970s, the Prime Forestlands Identification Project was organized to promote the continuing use of the Upper Peninsula forest resource by identifying and mapping the areas of greatest potential for forest production. Prime forestlands are those that, because of favorable soil characteristics and other factors, are capable of producing sustained yields of wood products. Keweenaw County was determined to have approximately 128,632 acres of prime forestland, concentrated primarily in the central inland portion of the county. Of the roughly 100 miles of county shoreline, less than eight scattered miles have been identified as prime forestland. This finding is perhaps fortunate because commercial forestry operations could potentially degrade the scenic attributes of the Lake Superior shoreline and adversely impact tourism. Therefore, efforts to improve the local economy through expanding timber related industries, should be focused on the central inland portions of the county where the most productive lands are located. In the same view, the county may want to consider prohibiting visually degrading forest practices, such as clear-cut harvesting, within any shoreline area or within sight distance of any major state or county highway right-of-way which runs along the shoreline.

Environmental Considerations

In 1973, the Western Upper Peninsula Regional Planning and Development Commission completed the Environmental Land Use Plan for their six-county region. Included in the plan were a number of resource suitability maps which indicated the development potential of various areas based on environmental and natural resource

characteristics. These maps indicate that the entire Keweenaw County shoreline, due to bedrock, soil types, slopes, drainage, high water tables and other factors, pose severe limitations for intensive urban development (with or without sewer), as well as for cropland, pasture and commercial forest. Finally, certain areas of the shoreline are subject to erosion by Lake Superior wave action. This situation can present a significant hazard to any type of shoreline development. This issue will be addressed in more detail in a later chapter.

These inherent environmental limitations to urban development should serve to assure residents and visitors that the scenic and unique natural resources of the county will not be endangered by encroaching urban development. This means that the area will remain very attractive to tourists for the foreseeable future, opening up vast opportunities for additional recreation and related tourism development.

Recreation Potential

The 1972 Open Space and Recreation Inventory-Interim Plan of the Western Upper Peninsula Planning and Development Commission indicates that several types of recreational activities could be expanded for the region including fishing, boating, canoeing, hiking, camping, visiting historic sites, ice fishing, downhill skiing and others. As an indication of tourism levels in the county, during the past five years at Fort Wilkins State Park, attendance has averaged over 200,000 people per year. (Also note these years have included some very difficult economic times for many people.) With Keweenaw County's unique and beautiful shoreline to attract tourists and visitors, the county should be able to successfully capture its share of the expending vacation industry in the western Upper Peninsula. Accompanying the development of facilities for these recreational activities would be the need for additional stores, restaurants and motels.

FORT WILKINS STATE PARK* ATTENDANCE 1978-1982

* * * * *

	<u>Day Use Visitors</u>	<u>Camp Site Permits</u>
1978	293,327	8593
1979	211,895	7372
1980	182,186	6670
1981	189,067	6595
1982	179,413	6310

*Source: Parks Division, Michigan Department of Natural Resources.

SHORELAND MANAGEMENT GOALS AND OBJECTIVES

The Keweenaw County Planning Commission has determined that the following six shoreland management goals should guide local government decisions affecting the county's Lake Superior shoreline:

1. To develop multi-purpose use of Keweenaw County's Lake Superior shoreline to include outdoor recreation and the preservation of wildlife and natural resources.
2. To provide adequate public access, and to encourage wise use and development of the county's water resources.
3. To develop and improve recreational facilities to encourage year-around use, and a stable economic return.
4. To develop, protect and make available for public use the historic, scenic and natural areas of the county.
5. To improve wildlife and fish habitat to insure maintenance of species and the development of recreational and economic potential.
6. To guide new development into appropriate areas and avoid development in environmentally sensitive or hazardous areas.

In order to pursue these general shoreland management goals, a more specific set of objectives is needed to define the actions necessary to achieve them. The following objectives present specific categories of actions that will guide decision-making to better manage the county's Lake Superior shoreline:

- a) Pursue state, federal and private grants to purchase additional shoreline public access sites and parks, and to develop and improve such sites for public use.
- b) Consider other land acquisition techniques that don't involve the purchasing of property, such as easements, leaseholds and dedications, to create additional public access and park sites.

- c) Provide more opportunities for camping on county-owned lands.
- d) Encourage additional tourism development (motels, restaurants, private recreation facilities, etc.) in appropriate areas by use of promotional brochures, adjustments in zoning districts, tax incentives and other techniques.
- e) Adopt zoning provisions to protect property in designated 'high risk erosion areas' (under the Shorelands Protection and Management Act) and to administer the setback requirements at the county, rather than the state, level (see section on shoreland erosion).
- f) Develop and adopt improved zoning standards and procedures to protect environmentally sensitive areas and to guide new development into more appropriate areas.

The above stated goals and objectives constitute the policy of the Keweenaw County Planning Commission with regards to shoreland management and provides basis for more site specific development and management recommendations.

SHORELAND DEVELOPMENT RECOMMENDATIONS

Over the course of several meetings and workshops, the Keweenaw County Planning Commission with citizen input has prepared public project development recommendations for specific sites along the Lake Superior shoreline.

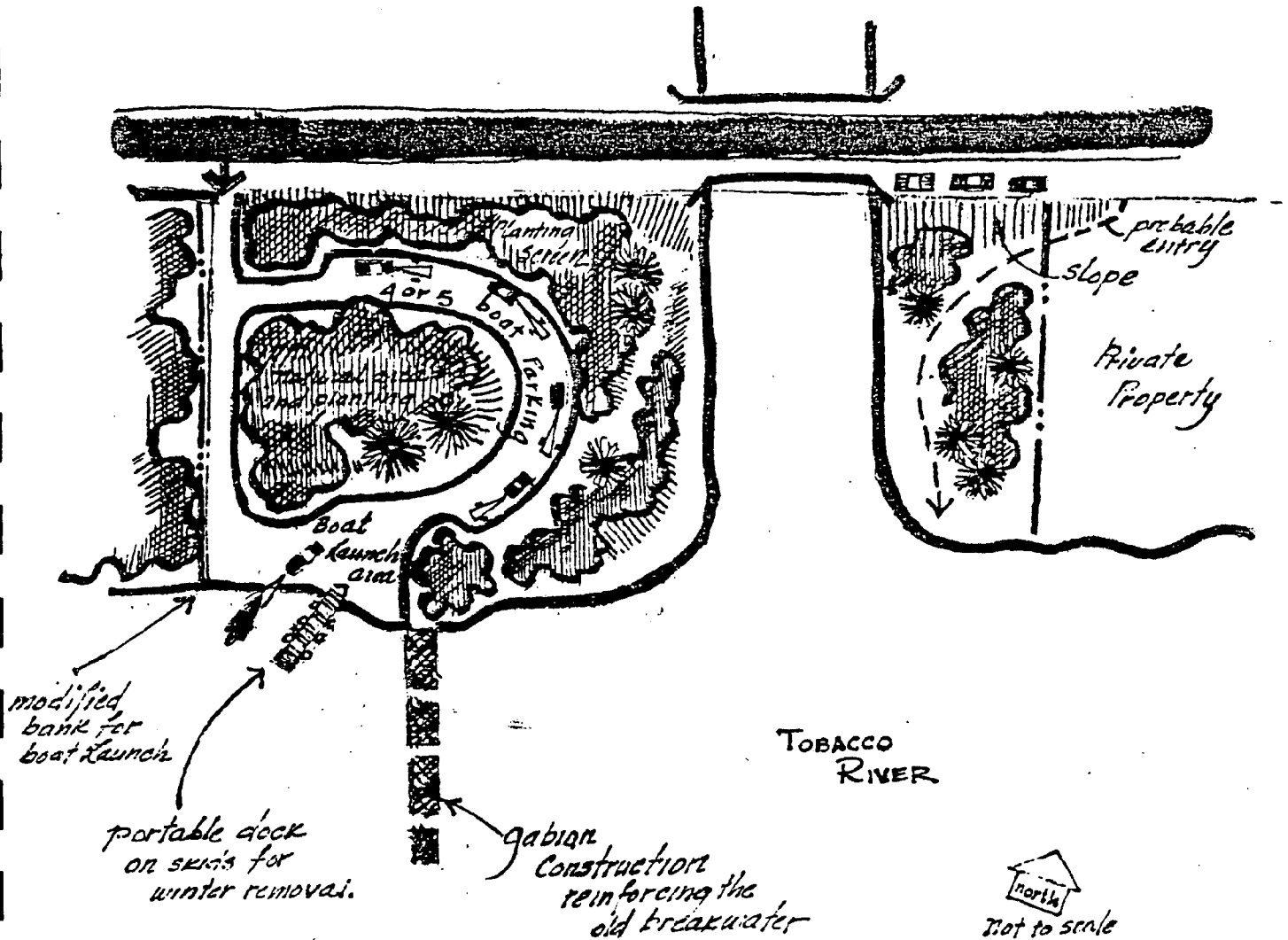
Site Name	Site Characteristics	Development Recommendation
Allouez Township		
Tamarack Waterworks	privately owned	not practical for county development
Cedar Bay	sand and pebble beach, good rockhounding, privately owned	explore possibility for public acquisition for public access, possible campground development (public or private), trail to 5 Mile Point
Gratiot River Mouth	privately owned, trail access, good for rockhounding, fishing	preserve for public access, maintain in natural state
Seven Mile Point	rocky point, sand and agate beaches, remote, poor road access, privately owned	possible long-range recreation development potential (public or private), but new road would be needed
Five Mile Point	220 feet of shoreline, county owned, steep slope between road and beach, sand and pebble beach, shoreline erosion occurring	preserve for public access
Veale Park	county owned and improved (toilets, stoves, picnic tables), park with 235 feet of shoreline, steep slope from road to beach, limited swimming due to rocky shore, a well-used area	continue the good maintenance program at the park site

Site Name	Site Characteristics	Development Recommendation
Silver River Falls	privately owned, with excellent scenic views in spring	no development needed, preserve
Houghton Township		
Eagle River Mouth	excellent sand beach, currently used as public access, under lease with private owner	public acquisition, possible beach house, develop boat launching site near area
Eagle River Falls	privately owned dam is in disrepair, attractive for tourists, deep canyon, historic bridge	encourage private repair of dam
Phoenix Dam	privately owned, needs restoration, possible swimming and ice skating area	consider land acquisition, study potential of snowmobile trail and cross country ski trail, extended along abandoned Keweenaw Central Railroad grade from Phoenix to Eagle River
Crestview Property (inland from Eagle River)	privately owned, campground potential with possibility for trails along Eagle River to Lake Superior	encourage private sector to develop a historic village /park with campground and trails
Eagle Harbor Township		
Great Sand Bay - Sand Dunes Drive	extensive stretch of sand dunes and beach, shoreline is severely eroding	implement erosion control techniques to stabilize dunes, plant dune grass along roads to trap blowing sand, construct stairways from the road to the beach at various places to reduce dune erosion due to foot traffic
Cat Harbor	state owned-county maintained, picnic tables, very narrow strip along road, swampy across road	maintain as is, no potential for further development
Eagle Harbor Lighthouse	U.S. owned-county historical society developing a museum in abandoned lighthouse and out buildings	support historic society efforts at the lighthouse museum, improve access to the site (roads and parking area)

Site Name	Site Characteristics	Development Recommendation
East Shore Eagle Harbor	sandy beach, privately owned, good area for swimming, picnicking	have county or township acquire site for public access and expand parking area
Eagle Harbor Beach	public beach-county owned, erosion problem at site	maintain as is
Eagle Harbor Boat Ramp	old Coast Guard site, now state waterways dock and, navigation difficult in rough seas ramp	maintain as is
Lake Bailey	state public access on lake, island owned by county, good area for canoeing, fishing	encourage use of island by canoeists for picnicking and rustic camping by placing signs at the public access site
Esrey Park	rough rocky shoreline, 1000 feet of county owned shoreline, county maintains a picnic area at the park, back acreage is swamp	maintain as is, possible embarkation point for canoe trail to county owned island and peninsula in Agate Harbor
Agate Harbor	county owns lighthouse property on peninsula, and Agate Island, potential for canoe trail and rustic camping	maintain as is
Hebard Park	rocky shoreline, 990 feet of county owned shoreline, county maintains with picnic tables, stoves and toilets	continue good maintenance at the park site
Grant Township		
Copper Harbor	a rocky harbor town with nearby Fort Wilkins State Park, facilities are available for camping, fishing, boat tours and boat rentals	explore the possibility of developing hiking trail around west side of harbor and east through the peninsula and Porter Island
High Rock Bay	privately owned, rough shoreline with lava formations, accessible only by 4-wheel drive vehicles, scenic views of Manitou Island	maintain as wild area

Site Name	Site Characteristics	Development Recommendation
Manitou Island	largely federal and state ownership	maintain as is
Montreal River Mouth	privately owned, currently used for some limited rustic camping	no development desired here
Mt. Houghton and Mt. Bohemia	privately owned, dramatic forested slopes, scenic views, hiking trails	anticipate issues while encouraging private development of a downhill ski resort
Bete Gris	excellent sandy beach near Mendota Channel, pine tree cover, privately owned, excellent camping potential	analyze site for recreation development potential
South Side Lac La Belle near highway & lakeshore	level land close to both lakes, not difficult to clear for camping	analyze site for recreation development potential
Haven Park and Falls	county-owned with picnic tables, stoves and toilets, attractive waterfall and walking bridge in park	maintain in good condition
Riverside Park	high on bank of Little Gratiot River leading into Lac La Belle, wooded park is county-owned and has picnic tables and stoves	sufficient development for this site, maintain in good condition
Sherman Township		
Brunette Park	narrow strip of land along highway with 1000 feet of Lake Superior frontage, park has picnic tables, stoves, toilets and a sandy beach, back acreage is swampy	no room for further development, maintain in good condition
Tobacco River Mouth	undeveloped county-owned site, popular fishing area with potential for a small boat ramp, includes 433 feet of shoreline	develop an access site with possibly picnic tables, a parking area, a small boat ramp, and a shoreline fishing area

PROPOSED DESIGN
TOBACCO RIVER MOUTH



*Note: natural depression should remain as a buffer & as a protection. It will stop cars from parking at random on the site and provide a natural landscape screen and planting for the Tobacco River park.

SOURCE: "Review of Houghton and Keweenaw County Park and Recreation Systems", by Cooperative Extension Review Team, Department of Park and Recreation Services, Michigan State University, 1983.

Site Name	Site Characteristics	Development Recommendation
Gay Park	county-owned (Road Commission) park on bluff overlooking stamp sand fill in Lake Superior, original shoreline in county ownership is 6369 feet in length, site is wooded with potential for campground development	improve and upgrade county park
Gay Area Stamp Sands	extensive deposit of stamp sand (from copper mining operations in the past) along the lakeshore, extending for several miles, largely barren with only limited vegetative growth, some small shallow ponds existing on the surface, sands are eroding rapidly by wave action	study the feasibility of various uses of the stamp sands which would produce a public benefit
Coal Dock Area	privately owned coal dock currently blocked in by stamp sands, possible potential use as a boat launch and marina, but dredging and stabilizing would be required	encourage private owners to study feasibility of marina development on this site

GENERAL SHORELAND DEVELOPMENT RECOMMENDATIONS

1. Improve recreation areas as needed by improving surface drainage, land smoothing, grass seeding, and landscaping.
2. Develop new, and extend existing, cross country ski and snowmobile trails.
3. Encourage development of camping areas along south shore with boat launching ramps and hiking trails.
4. Provide playground equipment for certain parks where it is needed.

SHORELAND EROSION

Shoreline erosion is the process of wearing away of a beach or bluff due to wave action. Great Lakes shoreland erosion is a natural geologic process which continually shapes Michigan's coast. In the past, the failure to recognize the natural hazards and dangers of shoreland erosion has proven to be very costly. In the early 1950's approximately 20 million dollars in property damage was caused by shoreland erosion just in Michigan. In the late 1960's and into the first half of the 1970's high lake levels and storms again caused millions of dollars worth of damage. In studies conducted by the U.S. Corps of Engineers for the period of 1972 through 1976, 85.7 million dollars (at 1973 price levels) of property damage in Michigan was attributed to Great Lakes flooding and erosion, of this total in excess of 46 million was attributed to erosion damage alone. Since 1969, over 80 residences have been destroyed and another 800 are in immediate danger of destruction or severe damage.

The Shorelands Protection and Management Act, P.A. 245 of 1970, as amended

In recognition of the powerful and continual process of shoreland erosion, and in light of high costs and difficulty of controlling this natural process, the Michigan Legislature in 1970 passed the Shorelands Protection and Management Act. The act takes a "nonstructural approach" to minimizing property loss, that is, instead of requiring that costly and ineffective erosion control structures be constructed, the act authorizes local management or state permit activities to prevent future construction in areas subject to "high risk" erosion.

The Shorelands Protection and Management Act directs the Department of Natural Resources to study Michigan's Great Lakes shoreline in order to identify areas of "high risk" due to shoreland erosion and flooding. Areas where the bluff is rapidly eroding are to be identified and the use of these areas managed to prevent property damage which can result if structures are placed in high risk erosion areas of the Great Lakes shorelands.

Identification of High Risk Erosion Areas

Identification of areas of high risk erosion and the calculation of bluffline recession rates involves the analysis of low altitude aerial photographs. The rates of bluffline

recession are determined by comparing aerial photographs of the shore at two different time periods and noting the changes in the position of the bluffline. Comparisons have been made of aerial photographs taken in the 1930's or the 1950's with those taken in the 1970's. The mechanical means of comparison actually allows later photographs to be superimposed over earlier aerial photos. From the overall change in the position of the bluffline, an average annual rate of bluffline recession can be calculated. Generally, the rate of shoreland erosion is determined by fluctuations in lake levels, wave action, the physical character of the shoreland, and other natural factors. The combination of high lake levels and storm activity can produce an accelerated rate of erosion where the bluff recedes (moves landward) several feet in one day.

Because the aerial photographs of the shoreline cover long periods of time including years of high and low lake levels, the average annual erosion rate is felt to be a good indicator of future erosion rates. Storm activity and lake levels cannot be accurately predicted over long periods of time so that the best indicator of what can be expected in the future is the experience of the past.

Local Zoning as an Option to Manage High Risk Erosion Areas

Basically, there are two types of solutions to the problems of construction in areas of high risk due to erosion--"structural" and "nonstructural". The structural solution to erosion includes the construction of groins, seawalls, revetments, beach walls and other erosion control structures. Such structural solutions to shoreland erosion problems are fraught with problems. The designing, engineering and construction of these structures must incorporate a multitude of considerations, including the effect of the device on adjacent property owners, the environment, and the public's right to the use of the Great Lakes. Too often, expensive erosion control devices are built, only later proving to be inadequate and ineffective in providing anything but short-term control of shoreland erosion.

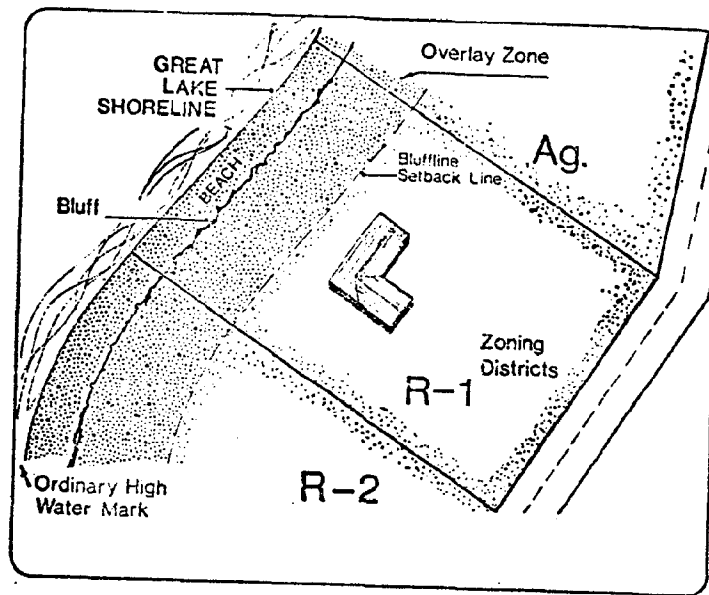
The alternative--the nonstructural solution--relies on the management of the use of land to prevent shoreland erosion damage. This approach is termed "nonstructural" because instead of providing any physical control of erosion processes it provides for guiding development in a manner sensitive to physical hazards and limitations in the landscape. For shoreland erosion areas, the nonstructural approach simply requires the establishment of a setback from an eroding bluff. By establishing this minimum

setback for structures in high risk erosion areas, a local unit of government has an effective and efficient means to prevent property losses without large public or private expenditures. The Shorelands Protection and Management Act incorporates the nonstructural approach by requiring a state permit or local zoning permit (when the local zoning for high risk erosion areas has been approved). This approach is designed to insure that new structures are setback from an eroding bluff a distance which will minimize future property loss and damage for a period of at least 30 years.

The adoption of local zoning not only is an effective means of preventing property damage due to erosion damage, but is also consistent with Michigan's tradition of local land resource management. Historically, Michigan cities, villages, townships and counties have had the responsibility and authority to establish local planning and land resource management programs. The adoption of local land use plans and a zoning ordinance allows a community to take an important step to guiding its own pattern of growth and development. A community that adopts local zoning for high risk erosion areas has the opportunity to integrate these regulations into a larger plan and management program to help insure appropriate future development.

High Risk Erosion Overlay Zone

The utilization of the overlay zone technique allows a local community to amend its existing zoning ordinance by adding special land development requirements which apply within the zone. In an area where an overlay zone is established, the land must be used under the conditions and requirements of the overlay zone as well as the underlying zoning district. Some of the most common uses for overlay zones relate to special environmental features such as flood plains and wetlands or may apply for special purposes such as preserving historic structures or establishing additional height restrictions in areas adjacent to airport landing strips. Overlay zones are described in the zoning text, mapped and adopted by the local legislative body in the same manner as other supplements or amendments to the zoning ordinance. Below is an illustration of an overlay zone. This illustration includes the terms used and shows the area affected by the high risk erosion zoning in a manner consistent with the sample zoning language.



A High Risk Erosion Overlay Zone

Benefits of the Overlay Zone. The use of the overlay zone is particularly well suited to establishing setback requirements in high risk erosion areas. By using the overlay zone technique, the desired land use pattern established in the existing zoning ordinance is not disturbed. The community's zone classification, maximum densities, height, bulk and other requirements remain unchanged. The overlay zone establishes a new setback requirement that is designed to protect structures from shoreline erosion related damage.

HIGH RISK EROSION AREAS IN KEWEENAW COUNTY

Shoreline erosion does not appear to be a critical problem in Keweenaw County due to stable bedrock formations and protected waters. Of the over 100 miles of county shoreline along Lake Superior, less than five miles has been designated as 'high risk erosion'. However, this does not mean that other shoreline areas are not eroding, only that they are not eroding at over a foot per year over a 30 year period, or that they do not fall under the jurisdiction of the Shorelands Act (such as the Gay area

stamp sands which local residents report are rapidly eroding). The few high risk erosion areas that have been designated under the act are located in Allouez, Houghton, Eagle Harbor and Grant townships (see maps). For Keweenaw County to obtain the authority to administer the setback requirements for designated high risk erosion areas under the act, a zoning amendment similar to the following would need to be adopted by the county and approved by the Department of Natural Resources:

PROPOSED AMENDMENT**SECTION 16 - HIGH RISK EROSION OVERLAY ZONE****1. PURPOSE**

The purpose of this overlay zone is to prevent the placement of structures in areas of high risk erosion consistent with the Shorelands Protection and Management Act, P.A. 245 of 1970, as amended. It is furthermore, the purpose of this zone to:

- 1.1 Establish a minimum setback line for principal structures from an eroding bluff which based on the erosion studies prepared by the Department of Natural Resources pursuant to the Shorelands Protection and Management Act, P.A. 245 of 1970, as amended, will provide a minimum of 30 years protection from shoreland erosion.
- 1.2 Minimize the economic hardships which individuals and Keweenaw County may face in the case of unanticipated property loss due to severe erosion.

The standards and requirements contained in this Article, and on the zoning map, are intended to further the purposes of the Shorelands Protection and Management Act, P.A. 245 of 1970, as amended.

2. AREA AFFECTED

The boundaries of those stretches of shoreland affected by the high risk erosion overlay zone shall be consistent with the affected properties described in Section 2.01 of this ordinance. This area is shown on the official Keweenaw County zoning map which is part of this ordinance. A copy of the zoning map and text shall be filed in the office of the county clerk. This area extends landward from the ordinary high water mark to the minimum setback line for principal structures. For the purpose of the high risk erosion overlay zone, the minimum setback requirement shall be measured landward from the bluffline and shall be construed as running parallel to the bluffline. In the event the bluffline recedes (moves landward), the setback line of the high risk erosion area shall also be construed as to have moved landward a distance equal to the bluffline recession.

2.1 BOUNDARIES OF HIGH RISK EROSION AREAS

The end points of the high risk erosion areas provided below coincide with descriptions provided in the shoreland erosion studies of the Department of Natural Resources, and are as follows:

2.2 ALLOUEZ TOWNSHIP

HIGH RISK EROSION AREA A - The northeastern end of Area A in Section 26, T58N, R32W, lies 1,075 feet northeast of the intersection of the Section 26-27 line, T58N, R32W, and the shoreline. The southwestern end of Area A in Section 26 lies 525 feet northeast of the intersection of the Section 26-27 line and the shoreline.

HIGH RISK EROSION AREA B - The northeastern end of Area B in Section 27, T58N, R32W, lies 650 feet northeast of the intersection of the Section 27-28 line, T58N, R32W, and the shoreline. The southwestern end of Area B in Section 28, T58N, R32W, lies 175 feet southwest of the intersection of the Section 27-28 line and the shoreline.

HIGH RISK EROSION AREA C - The northeastern end of Area C lies at the intersection of the Section 14-15 line, T57N, R33W, and the shoreline. The southwestern end of Area C in Section 22, T57N, R33W, lies 2,800 feet southwest of the intersection of the Section 15-22 line, T57N, R33W, and the shoreline.

HIGH RISK EROSION AREA D - The northeastern end of Area D in Section 27, T57N, R33W, lies 4,025 feet northeast of the intersection of the Section 27-28 line, T57N, R33W, and the shoreline. The southwestern end of Area D in Section 27 lies 2,475 feet northeast of the intersection of the Section 27-28 line and the shoreline.

HIGH RISK EROSION AREA E - The northeastern end of Area E in Section 27 lies 1,075 feet northeast of the intersection of the Section 27-28 line and the shoreline. The southwestern end of Area E lies at the intersection of the Section 27-28 line and the shoreline.

2.3 HOUGHTON TOWNSHIP

HIGH RISK EROSION AREA A - The northeastern end of Area A in Section 16, T58N, R31W, lies 1,340 feet northeast of the intersection of the Section 16-17 line, T58N,

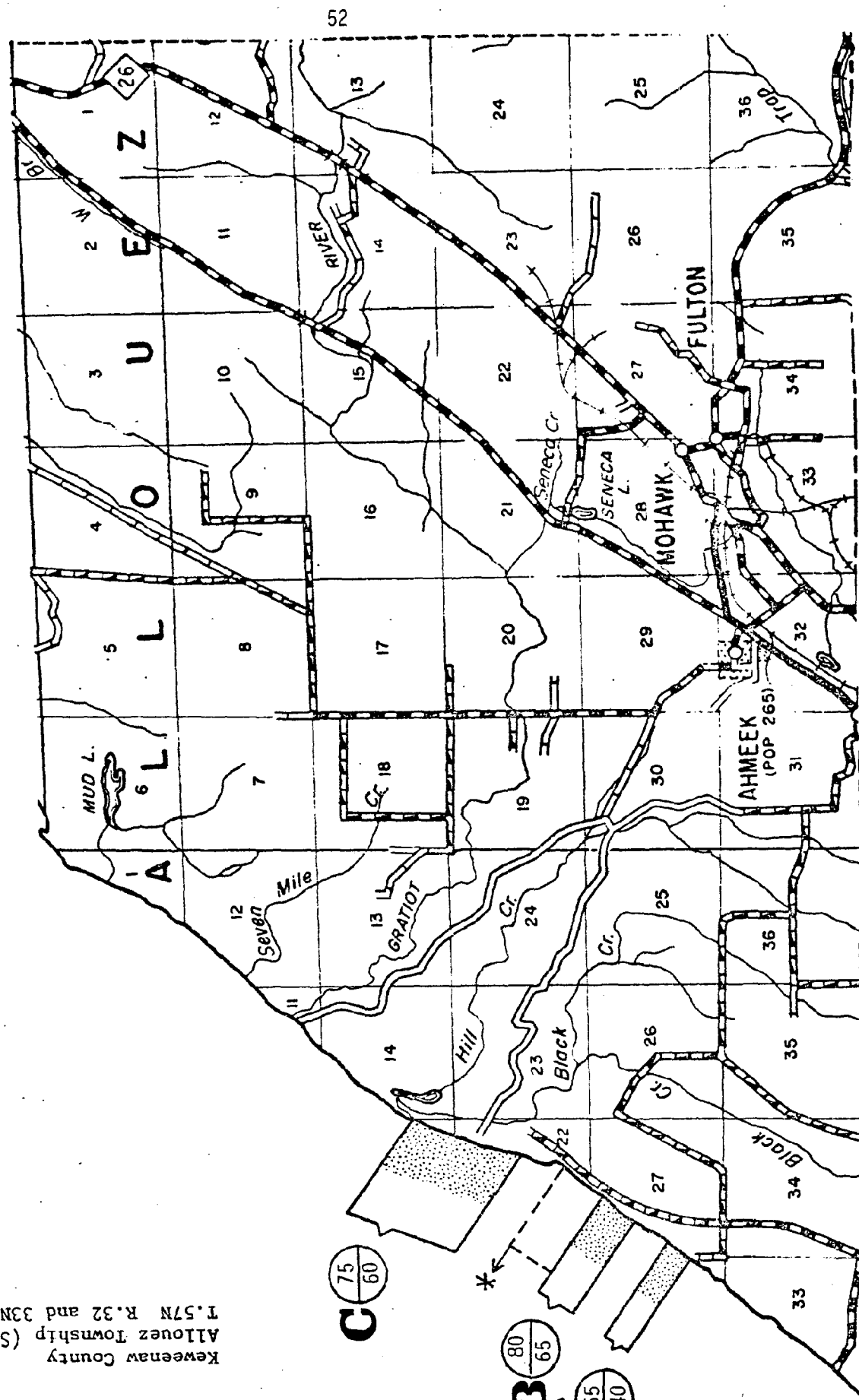
Keweenaw County
 Allouez Township (Southwest Part)
 T.57N R.32 and 33N

WIDE SHADED BAND
 DEMARKS HIGH RISK
 EROSION AREA



RECOMMENDED SETBACK
 MINIMUM REQUIRED SETBACK

* NO RATES AVAILABLE--
 AREA REQUIRES FURTHER STUDY



C $\frac{75}{60}$

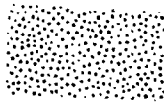
B $\frac{80}{65}$

A $\frac{55}{40}$

R33W R32W

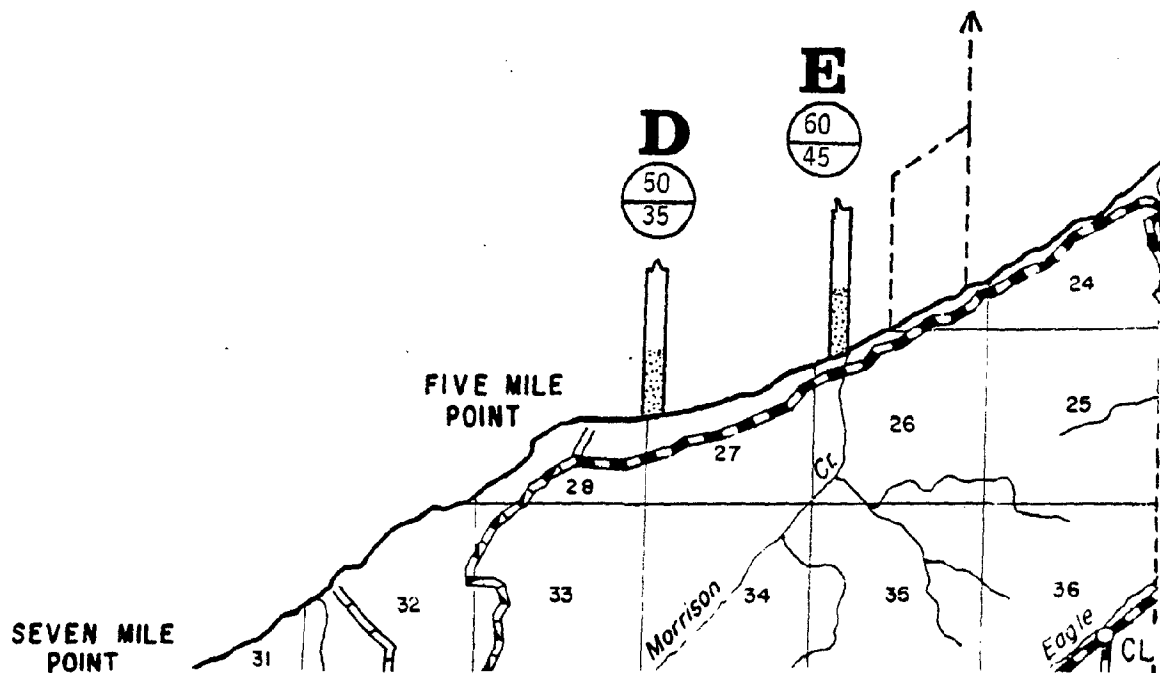
1982

Keweenaw County
Allouez Township (Northeast Part)
T.58N R.32W

 WIDE SHADED BAND
DEMARKS HIGH RISK
EROSION AREA

 RECOMMENDED SETBACK
MINIMUM REQUIRED SETBACK

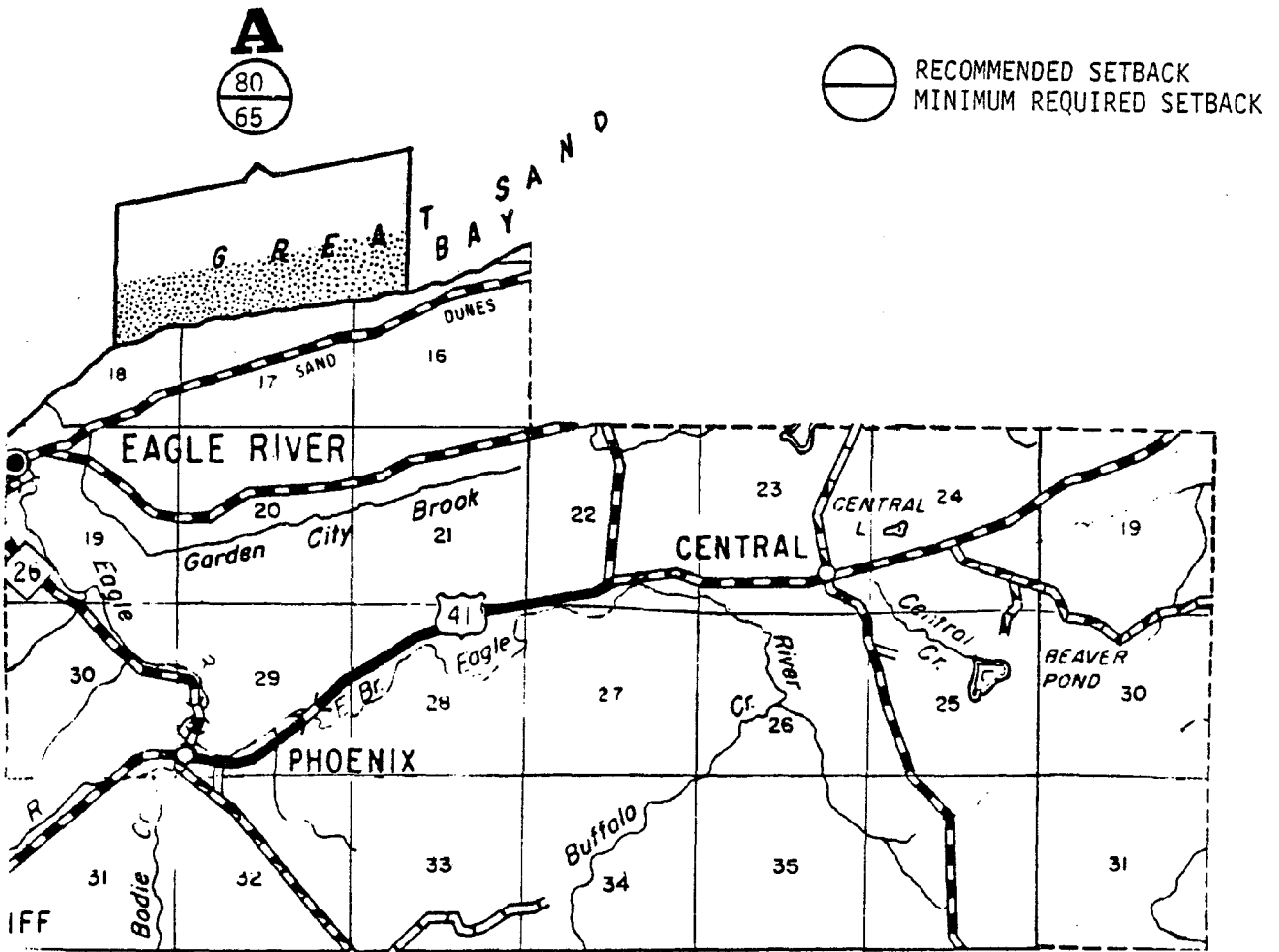
NO RATES AVAILABLE--
AREA REQUIRES FURTHER STUDY



1982
Amended 5/83

Keweenaw County
Houghton Township
T.58N R.31W

WIDE SHADED BAND
DEMARKS HIGH RISK
EROSION AREA



R31W, and the shoreline. The southwestern end of Area A in Section 18, T58N, R31W, lies 2,100 feet southwest of the intersection of the Section 17-18 line and the shoreline.

2.4 EAGLE HARBOR TOWNSHIP

HIGH RISK EROSION AREA A - The northeastern end of Area A in Section 10, T58N, R31W, lies 1,500 feet southwest of the intersection of the Section 3-10 line, T58N, R31W, and the shoreline. The southwestern end of Area A in Section 10 lies 2,000 feet northeast of the intersection of the Section 10-9 line, T58N, R31W, and the shoreline. This section line is also the Houghton-Eagle Harbor Township boundary.

2.5 GRANT TOWNSHIP

HIGH RISK EROSION AREA A - The northeastern end of Area A in Section 36, T57N, R30W, lies 1,325 feet northeast of the intersection of the Section 35-36 line, T57N, R30W, and the shoreline. The southwestern end of Area A in Section 36 lies 300 feet northeast of the intersection of the Section 35-36 line and the shoreline.

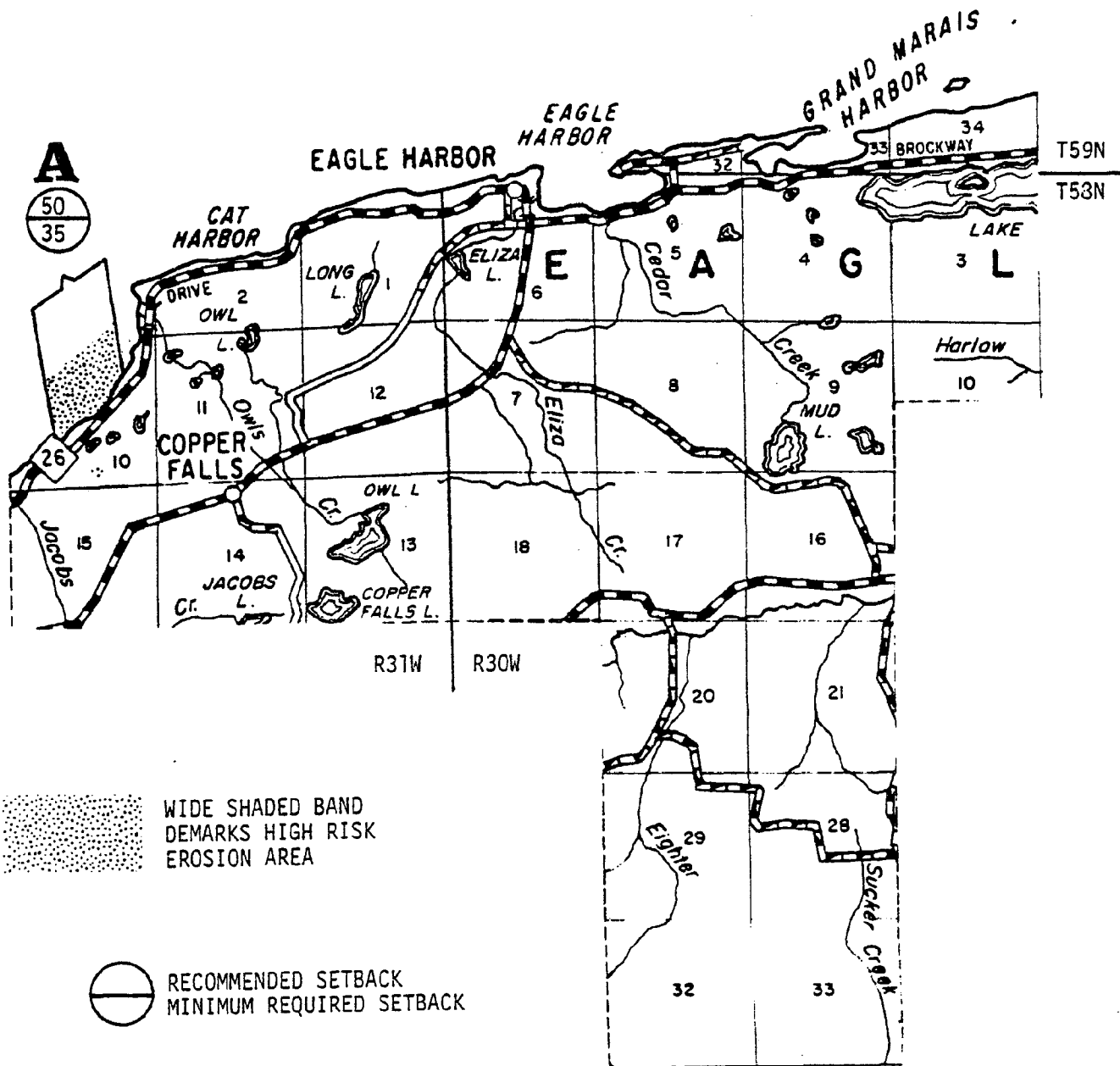
3. SCHEDULE OF REGULATIONS

Within the boundaries of the high risk erosion areas established by this Section, no principal structure shall be located between the ordinary high water mark and the line defining the minimum setback distance indicated on the table that follows. The setback requirement provided for in this section shall be measured in a landward direction as a distance horizontal from and perpendicular to the bluffline. For each high risk erosion area described in Section 2.01, the minimum setback for any principal structure shall be as follows:

	<u>Designated High Risk Erosion Area</u>	<u>Minimum Setback Requirement from the Bluffline</u>
Allouez Township	Area A	40'
	Area B	65'
	Area C	60'
	Area D	35'
	Area E	45'
Houghton Township	Area A	65'
Eagle Harbor Township	Area A	35'
Grant Township	Area A	35'

1982

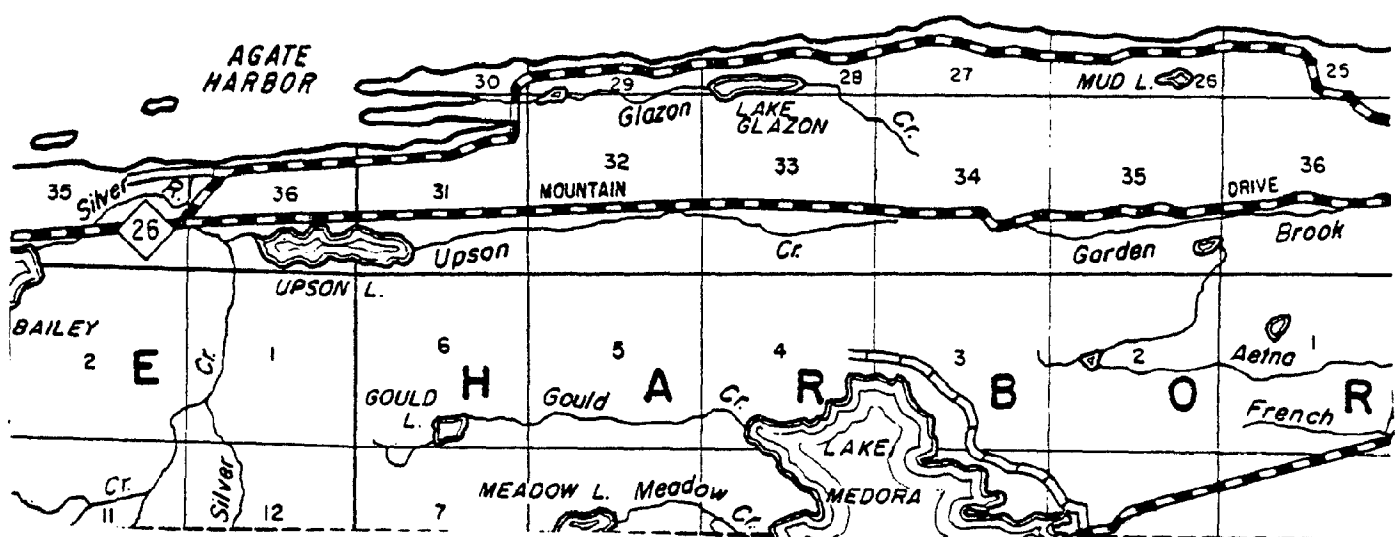
Keweenaw County
 Eagle Harbor Township (West Part)
 T.58 and 59N R.30 and 31W



1982

Keweenaw County
Eagle Harbor Township (East Part)
T.58 and 59N R.29 and 30N

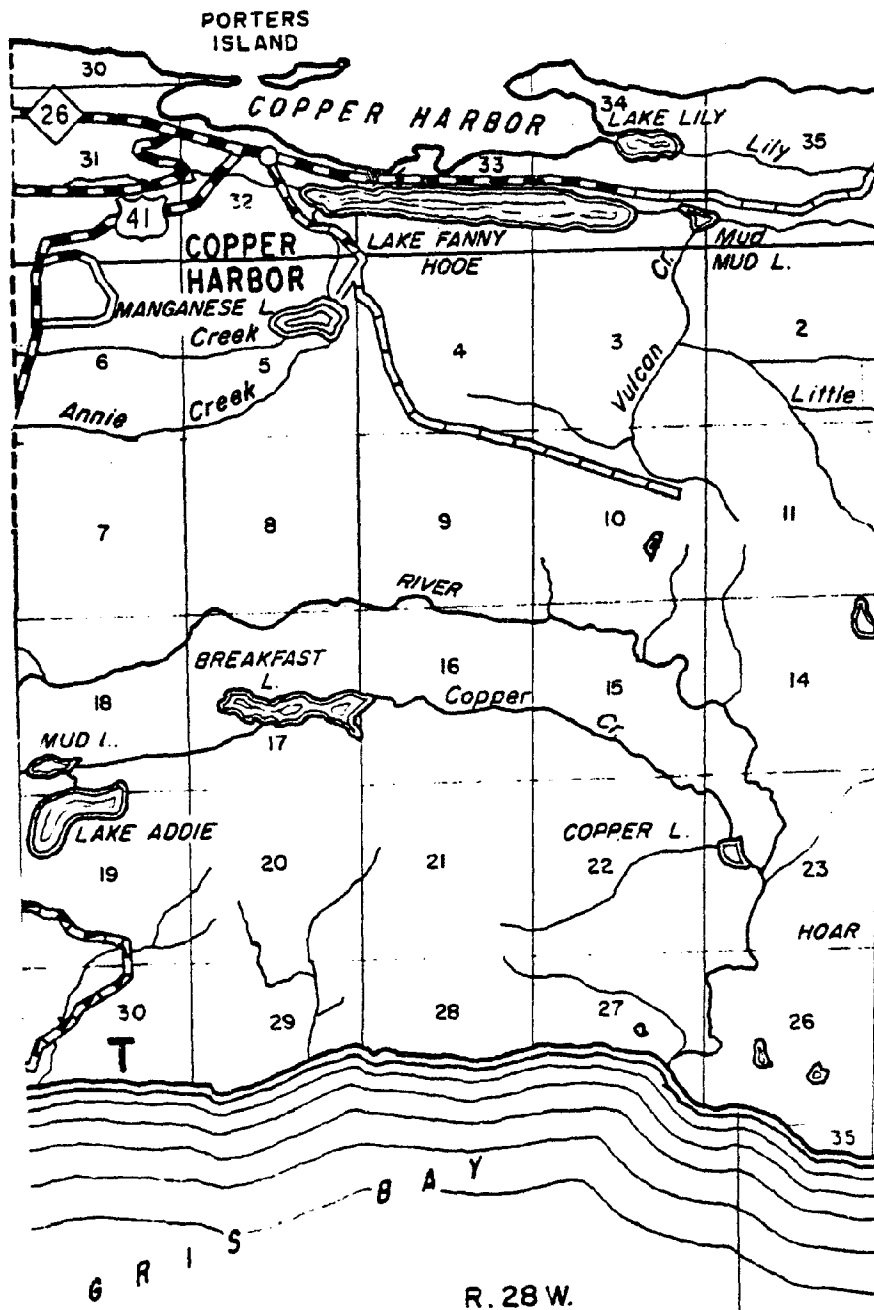
(No High Risk Erosion Areas in this
portion of the township.)



1982

Keweenaw County
 Grant Township (Northeast Central Part)
 T.58 and 59N R.28W

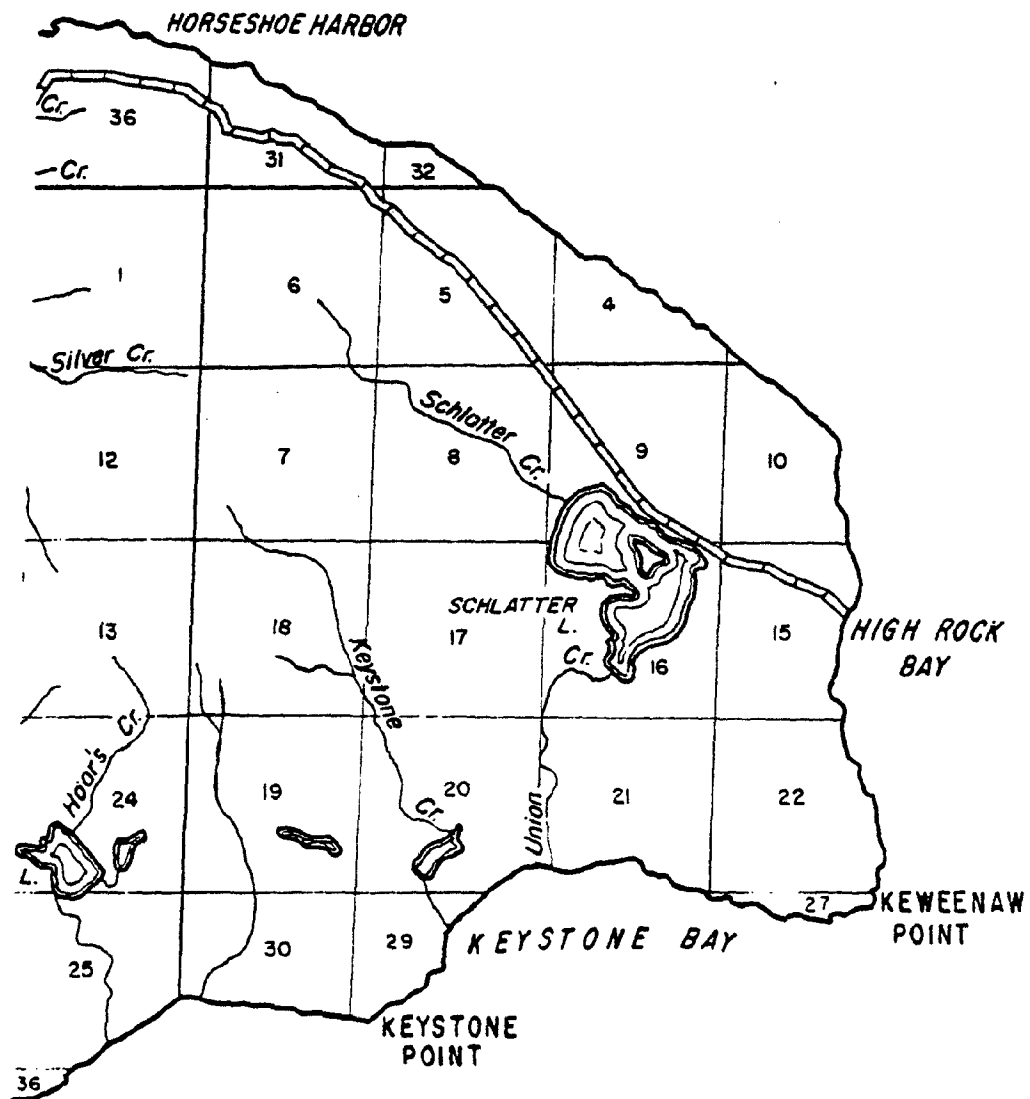
(No High Risk Erosion Areas in this
 portion of the township.)



1982

Keweenaw County
Grant Township (Northeast Part)
T.58N R.27 and 28W

(No High Risk Erosion Areas in this
portion of the township.)



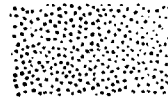
1982
Amended 5/83; 8/

Keweenaw County
Grant Township (Southern Part)
T.57N R.29 and 30W

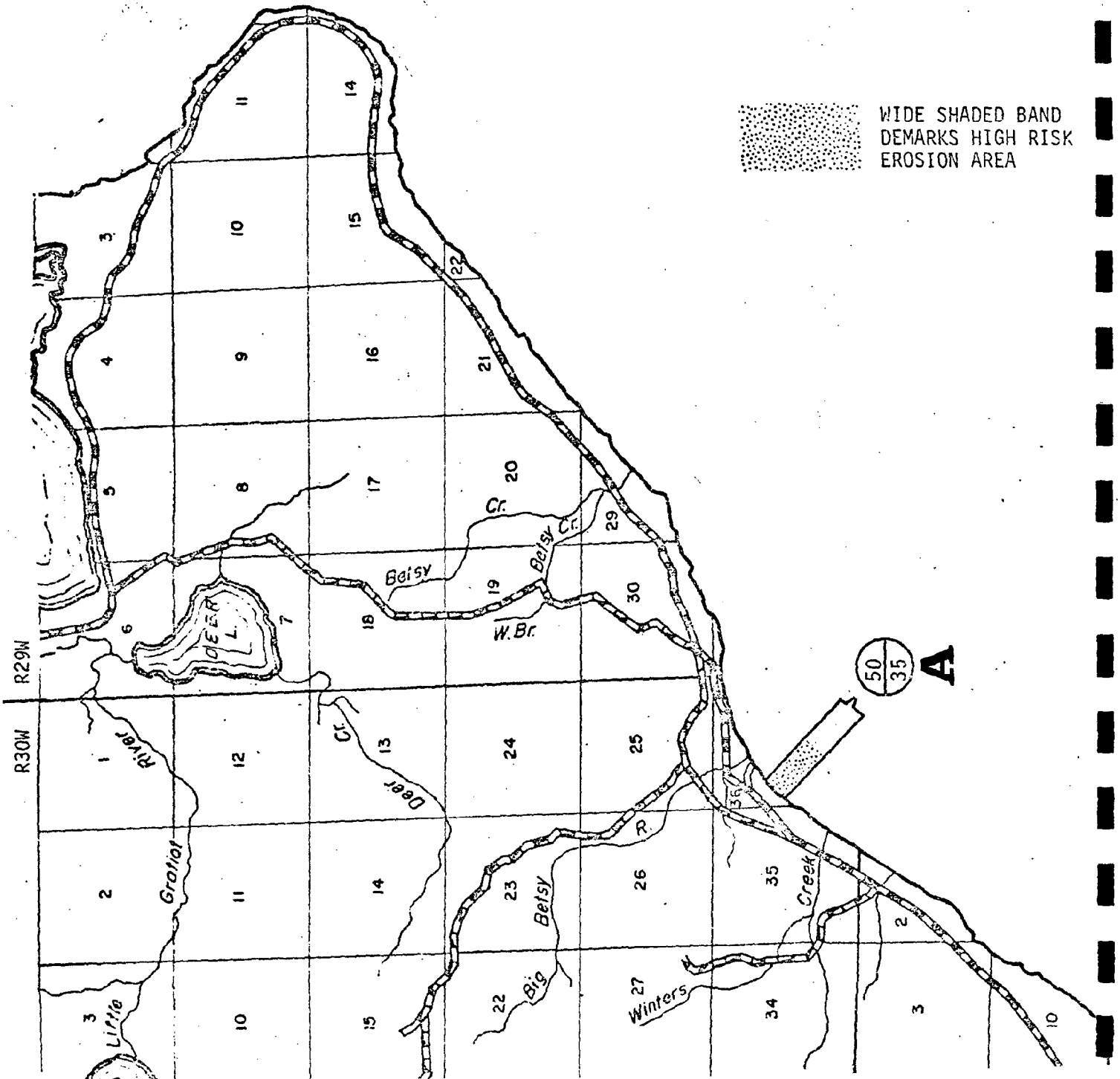
POINT ISABELLE



RECOMMENDED SETBACK
MINIMUM REQUIRED SETBACK



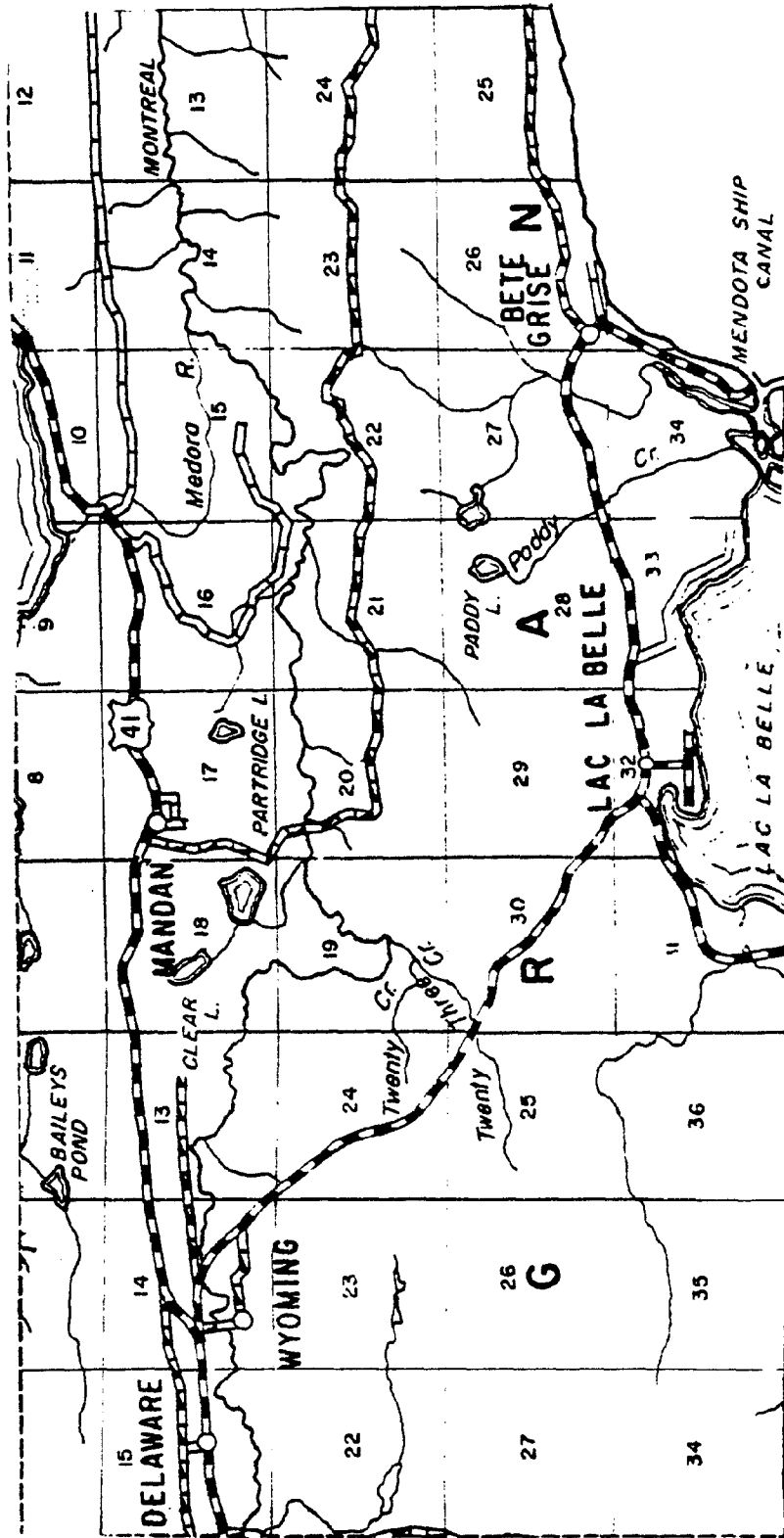
WIDE SHADED BAND
DEMARKS HIGH RISK
EROSION AREA

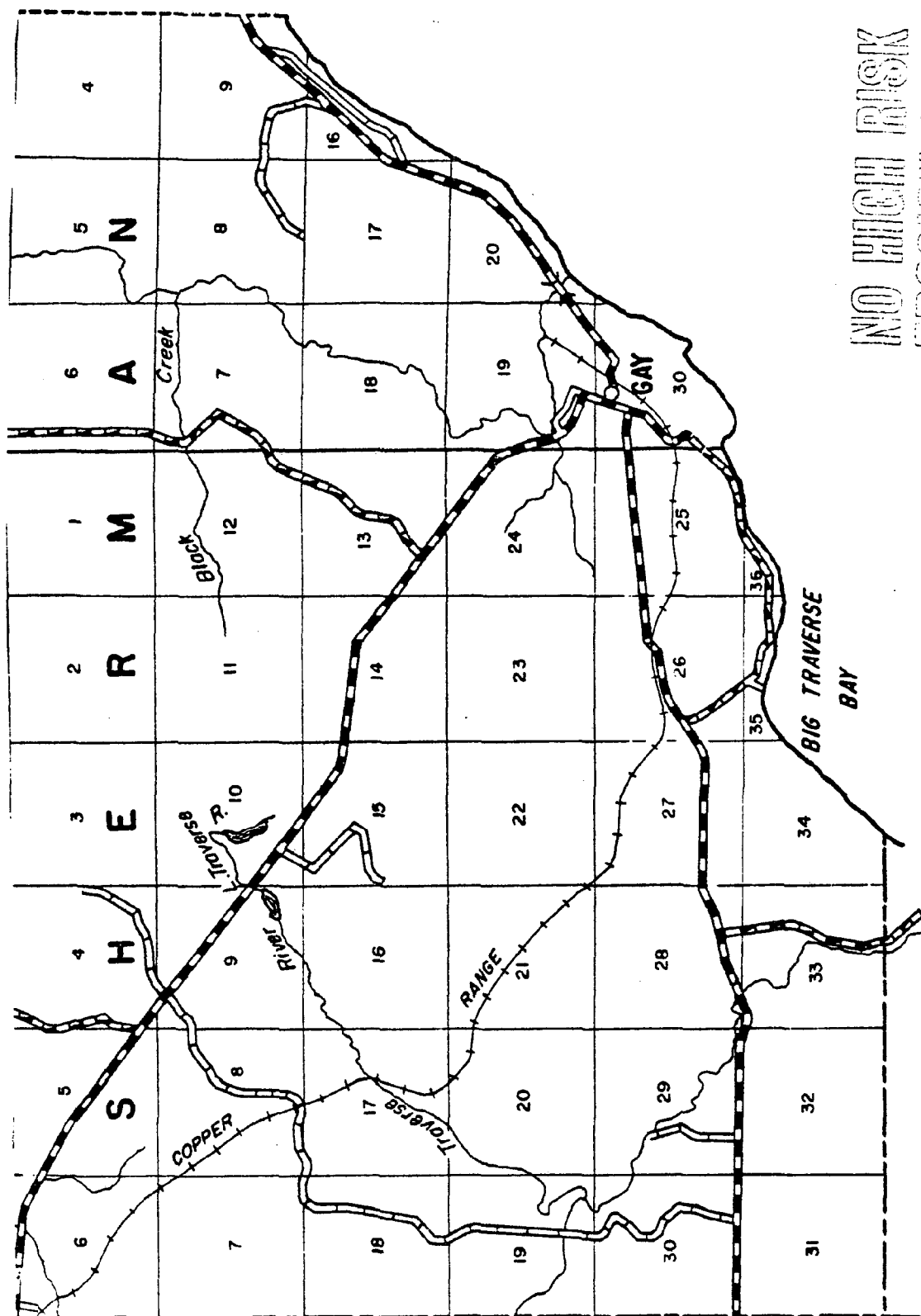


1982

Keweenaw County
Grant Township (Northwest Central Part)
T.58N R.29W and R.30W

(No High Risk Erosion Areas in this
portion of the township.)





Keweenaw County
Sherman Township
T.56N R.30 and 31W

4. ACCESSORY STRUCTURES

Accessory structures which can be easily and economically removed prior to erosion damage are exempted from the setback requirements for principal structures of the high risk erosion overlay zone, except that no accessory structures which are permanent in either construction or location may be placed in the high risk erosion overlay zone. To the fullest extent practical, permitted accessory structures which are placed in high risk erosion areas shall be removed prior to erosion damage.

5. SPECIAL EXCEPTIONS FOR SUBSTANDARD LOTS

(this section is optional)

- 5.1 A special exception may be granted to install a moveable structure on a substandard lot if all of the following provisions are complied with:
- (a) If a sanitary sewer is not used, the septic system, tile field, or other waste handling facility shall be located on the landward side of the moveable structure.
 - (b) The moveable structure shall be located as far landward of the bluffline as local zoning restrictions allow.
 - (c) The moveable structure shall be designed and constructed in accordance with proper engineering standards and building moving restrictions applicable to the subject area. Review and approval of the design shall be incorporated into the Department permit process. All construction materials, including foundations, shall be removed or disposed of as part of the moving operation. Access to and from the structure shall be of sufficient width and acceptable grade to allow for moving of the structure.
- 5.2 If a substandard lot does not have access to and from the structure site of sufficient width and acceptable grade to allow for a moveable structure, a special exception may be granted to utilize an erosion control device in place of a portion of the minimum setback requirement. The special exception shall be granted only if all of the following provisions are complied with:

- (a) If a sanitary sewer is not used, the septic system, tile field, or other waste handling facility shall be located on the landward side of the permanent structure.
- (b) The permanent structure shall be located as far landward of the bluffline as local zoning restrictions allow.
- (c) The erosion control device shall be designed to meet or exceed proper engineering standards for the Great Lakes, and a professional engineer shall certify that the device has been designed and will be constructed in accordance with these standards.

Also, two other minor additions would need to be made to make the high risk erosion area overlay zone amendment eligible for approval under the Shorelands Protection and Management Act. In Section 14.2, four additional definitions are needed:

- 1) BLUFFLINE - the line which is the edge or crest of the elevated segment of the shoreline above the beach which normally has a precipitous front inclining steeply on the lakeward side. Where there is no precipitous front indicating the bluffline, the line of perennial vegetation may be considered the bluffline.
- 2) HIGH RISK EROSION AREA - an area designated as a high risk erosion area due to shoreland erosion by the Department of Natural Resources pursuant to the Shorelands Protection and Management Act, Public Act 245 of 1970, as amended.
- 3) MOVEABLE STRUCTURE - means a structure which the Keweenaw County Building Inspector has determined to be moveable. Such a determination shall be based on a review of the design and size of the structure, a review of the capability of the proposed structure to withstand normal moving stresses and a site review to determine whether the structure will be accessible to moving equipment.
- 4) ORDINARY HIGH WATER MARK - means the line between upland and bottomland which persists through successive changes in water levels below

which the presence and action of the water is so common or recurrent that the character of the land is marked distinctly from the upland and is apparent in the soil itself, the configuration of the surface of the soil and the vegetation. Consistent with the Great Lakes Submerged Lands Act, P.A. 247 of 1955, as amended, the ordinary high water mark shall be deemed to be the following elevation above sea level, International Great Lakes Datum of 1955 for Lake Superior is 601.5 feet.

In Section 11.2(6), a statement requiring notice to the Department of Natural Resources when a variance request is made in a designated high risk erosion area needs to be added.

If, or when, all of the above provisions, along with the appropriate maps, are adopted as an amendment to the Keweenaw County Zoning Ordinance, the entire ordinance should be submitted to the Department of Commerce and the Department of Natural Resources for formal approval. When these approvals are received, Keweenaw County will then have the authority to administer the setback requirements for designated high risk erosion areas pursuant to the Shorelands Act.

IMPLEMENTATION TECHNIQUES

County governments in Michigan have at their disposal a variety of means to implement plans which involve the acquisition, development or management of land.

Land Acquisition

Acquiring lands for public use can be accomplished by either of two different methods. The first is "fee simple" acquisition which refers to outright ownership of a piece of property obtained by purchase or by donation. The other is "less than fee simple" acquisition which involves a public right to use property that is still in private ownership, that is obtained by purchase or donation.

Fee simple land acquisition for public access sites and parks can be done with local funds only, state or federal grant funds, or the most practical way of combining local and state or federal funds. Two programs at the state level which can assist in public land acquisitions by local government are the "Michigan Land Trust Fund" and the "Land and Water Conservation Fund". The Michigan Land Trust Fund operates with funds derived from royalties paid to the state for oil and gas development on state land. A complete description of the program is included in the appendix. To obtain funding assistance from the Land and Water Conservation Fund Program, a local recreation plan is required before a community is eligible to receive funds. The required elements of such a local recreation plan is included in the appendix, along with a contact person. Both of these programs are administered by the Michigan Department of Natural Resources.

Fee simple land acquisition can also be accomplished by requesting donations of critical properties to the county for protection and management. Private landowners may be willing to donate land because they want to see it protected or because of the tax advantages that are available.

A cheaper way to obtain public rights to use land is through "less than fee simple" techniques such as easements or leaseholds. These techniques usually involve negotiation between the local government and the private landowner to work out an

easement or leasehold agreement. Usually some type of fee is paid to the private landowner for the right of the public to use the property, although some private landowners may be willing to grant an easement to the county without requiring any payments. By using these methods, the county can open up new areas for public use without having to expend large sums of money for the outright purchase of land. More information on less than fee simple acquisition techniques can be found in the appendix.

Land Development

The development of land according to this plan includes both public and private endeavors. Examples of public developments would focus chiefly on recreation, such as parks, boat launching ramps, trails and other facilities. Private developments would include motels, restaurants, private recreation businesses, stores, gas stations, etc.

For public recreational projects, the Land and Water Conservation Fund Program mentioned earlier may be able to assist in funding once a local recreation plan is developed. Also, the Michigan Department of Commerce has several programs related to community development assistance. For further information contact:

Bill Lontz
Community Economic Development Division
Michigan Department of Commerce
Box 30225
Lansing, Michigan 48909
517/373-0347

For local recreational projects which involve boat ramps or harbors, contact:

Walter Poyet
Waterways Division
Michigan Department of Natural Resources
Box 30028
Lansing, Michigan 48909
517/322-1311

To adequately organize and carry out these community development projects, the county should prepare a "capital improvements program" for the entire county which places priorities on each proposed project and schedules them over a one to three

year period. Also, for each project, proposed funding sources should be identified. The Board of Commissioners should then use this document to guide their decision-making on funding public projects.

For private development projects, the Michigan Department of Commerce has several programs to assist communities in providing incentives to business and industry. Information can be obtained on tax abatement techniques, tax increment financial, public-private ventures and small business assistance. For more information, contact:

David Turner
Community Economic Development Division
Michigan Department of Commerce
Box 30225
Lansing, Michigan 48909
517/373-0637

Land Management

The county's most direct authority to manage land comes from the County Rural Zoning Enabling Act (Public Act 183 of 1943, as amended), and is manifested in the current county zoning ordinance. With the completion of this Shoreland Management Plan, the Planning Commission should now scrutinize the zoning ordinance to make sure that it is consistent with the goals, objectives and recommendations of the plan. Professional planning assistance should be enlisted as part of this effort. The following items should be carefully reviewed:

1. Check the boundaries of the zoning districts with the land use/cover maps for each township. Do they make sense?
2. The specific provisions for each zoning district should be reviewed. Are they adequate? Should other types of zoning standards be considered, such as: setbacks from public highways; vegetative buffers in scenic areas; protection of unique geological features (i.e. cliffs, waterfalls, rocky islands) or special or endangered plant species; and prohibiting certain uses in critical areas (such as junk yards along Brockway Mountain Drive)?

3. The procedures in the zoning ordinance should be reviewed for their adequacy. Is the administration of the ordinance going smoothly? Should new procedures be considered for certain critical areas, such as site plan review or planned unit development provisions?

In regards to the high risk erosion areas designated under the Shorelands Protection and Management Act, if the county adopts the language in the shoreland erosion section of this plan, the ordinance must be sent to the Michigan Department of Commerce and the Michigan Department of Natural Resources for final approval. With such approvals, the county would be responsible for administering the setback requirements to protect property in the high risk erosion areas.

It should also be noted that under the Great Lakes Submerged Lands Act (Public Act 247 of 1955), any modification of the Lake Superior shoreline, whether for dredge/fill activity or constructing a seawall, a permit from the Michigan Department of Natural Resources is required. County zoning officials should make sure that developers have obtained, or will obtain, the state permit prior to issuing a zoning or building permit.

APPENDIX A

**NOTES ON LESS THAN FEE SIMPLE
LAND ACQUISITION TECHNIQUES**

Overview of Less-Than-Fee Techniques

<u>Technique</u>	<u>Characteristics</u>
Easement	<ul style="list-style-type: none"> * Limited right or set of rights over land owned by somebody else. * Usually "runs with the land" by being written into the deed of title and is, therefore, binding on succeeding property owners. * Can serve a variety of purposes including the protection of scenic views and natural features, the provision of public access, and the control of development.
Leasehold	<ul style="list-style-type: none"> * Agreement whereby the landowner (lessor) grants an interested party (lessee) the right to use the land in a specified manner for a specified time. * Rights and responsibilities of the lessor and lessee are carefully spelled out as in a contractual agreement. * Interest rights revert back to the lessor after the lease expires.
License	<ul style="list-style-type: none"> * Arrangement whereby an individual or organization is granted permission to use the land in a specified manner. * Use rights granted are revocable.
Purchase Sellback/ Leaseback	<ul style="list-style-type: none"> * Means by which land is initially acquired through fee simple and is then resold/leased after restrictions have been attached to the deed. * Selling or leasing price of the restricted property is determined by the existing market demand. * Future property owners are bound by the deed restrictions.
Dedication, Gift, Trust	<ul style="list-style-type: none"> * Arrangement whereby landowner agrees to relinquish less-than-fee or fee interests to the property to another individual or administrative organization. * Most often involves indirect forms of compensation such as tax advantages rather than direct cash payments.
Compensible Regulation	<ul style="list-style-type: none"> * Involves the placement of controls on development similar to zoning. * No payment is made for the restrictions until the property is sold. * Compensation reflects the market demand which is operating at the time of sale and represents the difference between the sale price and the earlier assessed value.
Transfer of Develop- ment Rights	<ul style="list-style-type: none"> * Involves the transfer of rights from one property owner to another in order to achieve certain preservation objectives. * Transfer process consists of (1) designating the resources to be preserved; (2) determining those areas which can accept higher "densities"; and (3) shifting the permitted higher intensity development uses from (1) to (2). * Primarily used to date to protect open space and historical structures.
Covenant	<ul style="list-style-type: none"> * Binding written agreements made between two or more landowners.

- * Permits landowners to make agreements without directly involving governmental agencies or nonprofit organizations.
- * Most commonly used to restrict land use to low density residential and agricultural uses.

Suggested Area Selection Process Criteria for Less-Than-Fee Acquisition

PROPERTY CHARACTERISTICS

1. The property is under one of a limited number of ownerships. This will make the negotiating process easier from the standpoint of the number of participants and the variations in the terms and conditions for agreement.
2. Multiple use of the property is possible. Mineral lands provide an example of this since they can often be used for public access purposes while being held for future development. Public and private shoreline institutional uses might also be utilized for multiple purposes including public access and passive recreation.
3. The property would complement an existing public area owned in fee simple. Buffers to existing public areas (e.g., parks) as well as connecting links between public areas provide examples of this.

GENERAL MANAGEMENT OBJECTIVES

1. Future development can be guided and made more effective through: (a) "buying time" to make a later decision and leaving key options open and (b) channeling or constraining future land development patterns.
2. It is desirable to keep lands in the private sector in order to maintain the tax base and/or existing uses.
3. Public ownership is not necessary to achieve management objectives.
4. Funding levels or political constraints do not permit fee simple acquisition and less-than-fee acquisition is cost effective.

SITE SPECIFIC OBJECTIVES

1. Management advantages are possible by maintaining existing ownership. Principally, this involves owner maintenance and overseeing of the property. Retention of the local tax base is an important factor.
2. A more precise management tool is required in terms of spatial boundaries and rights acquired. Only portions of the property may need to be encumbered, and only certain interests in the property may be relevant to management objectives.

CHARACTERISTICS OF THE SELLER/DONOR

1. A "sympathetic" or willing seller/donor is involved. Many public agencies do not have clear eminent domain authority for less-than-fee acquisitions. In addition, because of the undeveloped state of the appraisal art with regard to the value of limited rights in land, costs will tend to be quite high if a seller is reluctant or a court judgement is required.
2. The seller/donor desires more negotiating room or certain tax advantages. Less-than-fee arrangements can be individually tailored in terms of duration, rights conveyed, restrictions on use, and responsibilities of the respective parties. In the case of leases, the lessor may assume tax liability. Donations can provide important income tax benefits, as well as property tax relief.

Easements

One of the most widely used less-than-fee techniques is the easement. Easements vary in nature and purpose, but can be defined generally as a limited right or set of rights over land owned by somebody else. Most easements "run with the land" and are, therefore, binding on succeeding owners of the property.

Under most easements, compensation is granted to the property owner for the rights which are relinquished. The amount of compensation will vary depending upon the particular rights obtained as well as upon the specific nature of the property involved. In general, however, the amount of compensation can be viewed as the difference between the appraised value of the land before and after it is encumbered with the easement.

Typically, easements are categorized as either affirmative or negative. Affirmative easements grant an individual a limited right to make use of someone else's property. Access rights to permit hunting and fishing are examples of this. Negative easements, on the other hand, prevent the landowner from using his property in certain specified ways. For example, a negative easement might limit the amount of development permitted on an individual's property, or might prevent the individual from extracting certain surface or sub-surface minerals such as sand.

Easements are also commonly categorized as either appurtenant or in gross. An appurtenant easement exists when the holder of the easement owns adjoining land which the easement benefits. The classic example of an appurtenant easement is a right-of-way of an adjoining piece of property for purposes of access to the property. An easement in gross exists when the easement has nothing to do with the ownership of nearby land. Conservation easements typically are considered to be examples of this.

Easements can be used to serve a variety of purposes. Among those which may be particularly useful in the management of coastal areas are the following:

Scenic

Scenic easements are usually designed to preserve the aesthetic attractiveness of an area. Their most common usage to date has been to preserve scenic views in land adjacent to public highways and parks. Scenic easements are negative in nature and generally restrict the following types of activities:

1. the erection of new buildings and structures
2. the cutting of vegetation
3. the dumping of unsightly or offensive materials, and
4. the erection and display of outdoor advertising, except for the advertising of on-site activities

Conservation

Conservation easements are used, in most instances, to preserve and protect the natural environment. Typically, they are negative in nature and contain most or all of the restrictions associated with scenic easements. The major difference between conservation and scenic easements is that conservation easements are usually broader in scope and are designed to protect all of the natural features of the land.

Development/Use

Development and use easements are designed to prevent overdevelopment of fragile and sensitive areas. They are usually negative and vary considerably in their restrictiveness depending upon the nature of the land. In areas which are particularly sensitive, development may be entirely prohibited.

Access

Access easements are used in a variety of situations where public access to private land is necessary or desirable. In most instances, these easements are affirmative in nature since they grant a limited right to make use of someone else's property. Among the purposes they commonly serve are the provision of access roads, nature trails, as well as access points for public hunting and fishing.

Easement Characteristics

Advantages

- * May be cheaper than purchasing the land outright.
- * Land is left in the hands of the private owner.
- * Land remains on the local property tax rolls, usually at a reduced level.
- * Property owner receives tax benefits due to lower assessed value of the property.
- * Maintenance costs usually remain with the property owner.
- * Easement can be tailored to meet varying needs and conditions.
- * Value of remaining and neighboring lands may be enhanced by protection afforded by the easement.

Problems

- * Difficult to assess the value of the rights relinquished for purposes of compensation.
- * Reduction in value of land may not be recognized for tax purposes by assessors.
- * Public is generally unfamiliar with the use of easements and may be reluctant to use them.
- * Specific easement restrictions may be misunderstood by property owner.
- * Subsequent owners may not know of easement restrictions they assume when purchasing the property.
- * Easement provisions may prove difficult to enforce.

Leaseholds

Leaseholds represent a second commonly used less-than-fee technique. Under a leasehold agreement, the owner of a parcel of land (lessor) grants an interested party (lessee) the right to use the land in a specified manner for a limited period of time. The leasehold thus creates and transfers to the lessee restricted rights, generally referred to as the leasehold estate. At the time of lease expiration, the restricted rights revert to the lessor. Usually the lessor and lessee have contractually decided what the state of this reversion should be before the rights are initially granted.

Leasehold Characteristics

Advantages

- * Flexible relative to possible length of contract's terms and types of affirmative interests which can be included.
- * Usually less expensive than purchasing the land outright.
- * Basic ownership remains with property owner.
- * In some states, lessor may be exculpated from personal and property liability to those using land for recreational purposes.
- * Lease is generally accepted and understood by the public and the courts.
- * Rights granted do not take away future rights for full use of property by lessor.
- * Public entry and use can be limited to specified months and purposes --permits some continued use of land by lessor during other times.
- * Lessee can arrange to pay lessor amount equal to lessor's tax liability as part of the lease agreement.
- * Capital improvements or facilities built on the land by lessee are retained by lessor after lease expiration.
- * Contractual nature of agreement helps to identify more clearly the maintenance/enforcement roles.

Problems

- * Lessor and lessee not always able to agree on term of lease or interests to be included therein.
- * Maintenance and enforcement costs may be high.
- * Leasing rates are adversely affected by development pressures (greater the pressure, higher the rates)
- * May not necessarily reduce owner's property tax liability.
- * Responsibility for personal and property liability may be unclear.
- * Short-term lease may discourage major capital improvements by lessee.

APPENDIX B

**THE MICHIGAN LAND TRUST FUND
PROGRAM INFORMATION**

SECTION I

GENERAL BACKGROUND

A. BASIS AND PURPOSE OF THE PROGRAM

The Kammer Recreational Land Trust Fund Act of 1976 (Public Act 204) was passed by the Michigan Legislature and signed by the Governor on July 23, 1976. This Act created the Michigan Land Trust Fund. The purpose of the program is to provide a source of funds for public acquisition of recreational lands. Funds are accrued from the sale of oil, gas, and mineral leases and royalties from oil, gas, and mineral extractions on state lands.

B. HOW THE FUNDING WORKS

The Trust Fund will accumulate revenue on a continuous basis until the Fund contains the sum of \$150 million, excluding interest. A portion of the revenues credited to the Trust Fund in any fiscal year may be used for land acquisition. All interest and earnings of the Trust Fund may also be used for acquisition. The program's operating expenditures, as well as taxes on lands acquired for state ownership through this program, are paid by the Trust Fund.

C. ADMINISTRATION OF THE MICHIGAN LAND TRUST FUND

The Michigan Land Trust Fund is administered by a Board of Trustees composed of five members. They are: the Chairman of the Natural Resources Commission, the Director of the Department of Natural Resources, and three citizen members appointed by the Governor. One of the citizen members is to be from a group representative of sportsmen's associations or interests. The Board meets at least bi-monthly. All meetings are open to the public. The Office of Budget and Federal Aid of the Department of Natural Resources has been designated as staff to the Board.

Any individual, group, or organization may submit a Land Acquisition Proposal. The Board reviews the proposals for conformance to its goals, and for the significance and availability of the land. Nominations submitted are considered by the Board for acquisition and management by the state or local units of government.

In January of each year, the Board submits to the Legislature a priority list of lands recommended for acquisition with Trust Fund monies.

SECTION II

GOALS OF THE MICHIGAN LAND TRUST FUND BOARD

The Kammer Recreational Land Trust Fund Act gives the citizens of Michigan a vehicle to begin an innovative, long-range recreational land acquisition effort. This program can meet today's needs while laying the foundation for responding to the needs of the future. Given this unique opportunity, the Michigan Land Trust Fund Board recognizes certain critical natural resources and social problems and issues confronting society. To address these problems and issues, the Board has adopted the following goals for the Michigan Land Trust Fund. These goals are not listed in order of priority.

GOAL

TO GIVE MAJOR EMPHASIS TO THE ACQUISITION OF LANDS OR INTERESTS IN LANDS WHICH WILL PROVIDE THE POTENTIAL FOR RECREATION OPPORTUNITIES IN OR NEAR URBAN AREAS.

The Board is sensitive to the problem of the urban areas, where large segments of the population - the poor, the minorities and the handicapped - have limited opportunity to improve their quality of living. The bulk of the population seeking outdoor recreation must now make repeated trips to areas in the state where resources remain in a more natural condition. Those urban residents lacking the necessary mobility, for whatever reason, to take advantage of these distant areas are thus denied certain recreation experiences taken for granted by so many other citizens in the state. Coupled with this inequity of opportunity is the long-term energy problem which will result in greater transportation costs for society. Policies which promote seeking recreation short distances from home will be in concert with the country's energy policy.

GOAL

TO ACQUIRE LANDS OR INTERESTS IN LANDS WHICH PROVIDE ACCESS TO AND USE OF INLAND LAKES, RIVERS AND STREAMS OR PRESERVE THE NATURAL CHARACTERISTICS OF A FLOODPLAIN.

Another problem is that of private development of inland lake, river and stream frontage. Such lands are limited and generally expensive for the public to acquire. They are highly suitable for recreation and offer natural beauty to be enjoyed by persons who have sufficient access. In many areas, the water frontage is developed in such a way that public access is restricted or precluded. Acquisition of these areas will allow the public to have contact with these important and limited resources.

GOAL

TO ACQUIRE LANDS OR INTERESTS IN LANDS WHICH PROVIDE THE POTENTIAL FOR PRESERVING OR ENHANCING RARE, FRAGILE OR SCENIC AREAS OR RESOURCES.

The above goal is a result of the Board's awareness that there is a continuing loss of certain valuable areas and resources which have irreplaceable qualities. The lands may have unusual, historical or aesthetic qualities, ecological character of particular importance, or they may be especially subject to destruction by man. Their sheer scarcity makes them valued by society. The Board sees a need to counteract the loss of such areas and resources.

GOAL

TO ACQUIRE LANDS OR INTERESTS IN LANDS PROVIDING HABITAT OR PROTECTION FOR ENDANGERED AND THREATENED SPECIES OF FISH, WILDLIFE OR PLANT LIFE.

In recent years there has been a steadily growing concern about the welfare of the drastically reduced stocks of native animal and plant life in Michigan. In spite of efforts to conserve our flora and fauna for the benefit of this and future generations, many species of fish, wildlife or plant life either continue to decline or do not increase from alarmingly low levels. As part of the state's total response to this problem, land acquisition has been identified as a method of protecting habitat critical to the survival of these species.

GOAL

TO ACQUIRE LANDS OR INTERESTS IN LANDS WHICH PROMOTE INNOVATIVE AND/OR EDUCATIONAL RECREATION OPPORTUNITIES.

Recognizing the ever-changing demands and lifestyles of the public, it is inevitable that novel land acquisition proposals will surface which cannot be anticipated by the Board. These innovative approaches to providing leisure pursuits may deal with a different perspective about a resource, or reflect a change in ways to respond to new social needs. The problem confronting the Board is being able to respond to and take advantage of unforeseen circumstances or opportunities that will have broad ramifications for society and the natural environment.

GOAL

TO EXPAND THE PUBLIC ACCESS TO AND USE OF GREAT LAKES AND CONNECTING WATERS SHORELINE THROUGH ACQUISITION OF LAND OR INTERESTS IN LAND.

Perhaps the most outstanding recreational assets of Michigan are its water and water frontage, especially the Great Lakes. Of the total mainland frontage, less than 20 percent of Great Lakes and connecting waters shoreline is in public ownership. Most of this public-owned frontage is in the northern part of the state, remote from the major population centers. Only 14 percent of the publicly owned Great Lakes and connecting waters shoreline is in the southern one-half of the Lower Peninsula.

GOAL

TO ENHANCE THE GENERAL VALUES OF THE PIGEON RIVER COUNTRY STATE FOREST.

The Board recognizes the Pigeon River Country State Forest was specifically identified as an area of special interest in the Act. In concert with this identification in the Act, the Board sees further acquisition and development as enhancing the qualities of the area.

GOAL

TO ACQUIRE LANDS AND INTERESTS IN LANDS THAT WILL PROVIDE HUNTING AND/OR FISHING OPPORTUNITIES.

The Kammer Recreational Land Trust Fund Act provides that Trust Fund revenues derived from lands acquired with federal and state hunting and fishing revenues shall be used only for the acquisition of hunting and fishing lands. The Board believes that hunting and fishing opportunities are an important recreational pursuit that should be specifically recognized.

SECTION III

A. TYPES OF LANDS ELIGIBLE UNDER THIS PROGRAM

Relevant to its goals, the Board has established eligibility requirements for lands proposed for acquisition. To be given consideration, the land must meet at least one of the following criteria;

1. The land is within one hour's driving time from the center of a Standard Metropolitan Statistical Area major city.
2. The land provides access to and use of inland lake, river, or stream frontage of recreational value, or is within a floodplain offering recreational opportunities.
3. The land provides potential for preserving or enhancing rare or scenic areas or resources which are of at least regional significance.
4. The land provides potential for preserving or enhancing fragile areas or resources that are sensitive and vulnerable to exterior forces.
5. The land has potential for preserving essential habitat or offering protection for endangered and threatened species of fish, wildlife, or plant life.
6. The land has potential for presenting innovative and/or educational recreational opportunities.
7. The land provides access to and use of Great Lakes and connecting waters shoreline.
8. The land is within the Pigeon River Country State Forest.
9. The land provides potential for hunting and/or fishing opportunities.

B. EXAMPLES OF PREVIOUS RECOMMENDED LANDS

Appendix A serves as an example of some of the types of land the Board considers significant and of high priority. This appendix contains a list of lands the Board recommended to the Legislature for acquisition each January from 1978 through 1983.

SECTION IV

QUANTIFIED CRITERIA AND OTHER FACTORS USED IN EVALUATING PROPOSALS

The Board is required to submit its list of recommended lands in order of priority to the Legislature, and to include a statement of the guidelines used in listing and assigning priority. To assist the Board in meeting these requirements, the Michigan Land Trust Fund Board staff reviews the proposals first for eligibility and significance. Those proposals having greatest potential as determined by the Board are then scored and ranked according to the quantified criteria listed in Appendix B. A proposal receives points in every factor of each category that is applicable to that proposal.

This scoring system allows an objective evaluation of the merits of each proposal relative to the Board's Goals, and assists in identifying priority proposals.

The score of a proposal based on the quantified criteria, however, is not the sole factor the Board must consider in making final funding recommendations. Other factors include cost, availability of the land, state or local unit of government interest in administering the land, project feasibility, public input, etc.

Additionally, when analyzing the requests of local government agencies for funds to acquire park lands, consideration will be given to the stewardship history of the applicant for:

1. Protecting its existing park, recreation, and open space resources, including protection against diversion of lands designated for park, recreation and open space purposes.
2. Operating and maintaining areas to acceptable standards.
3. Making available its recreation facilities on a non-discrimination basis.
4. Providing for proper staff to plan, develop, and maintain the park system.
5. Having an adequate local recreation plan.
 - a. The local plan will be reviewed concurrently with the application. The project will be evaluated by the extent it is identified in the plan and satisfies acknowledged needs.

Finally, all factors listed above must be considered for each proposal in relation to all other proposals received that year.

PLEASE NOTE: In its first six years of existence, the Michigan Land Trust Fund Board has received over 650 proposals for land with a total estimated value of over \$233 million. Just \$39.3 million has been available from the Trust Fund for acquisition. Because of the great difference between dollars requested and dollars available, the Board must forego many fine opportunities. When funding is not approved for an acquisition, it is not necessarily a statement that the property is not significant. More often, it is because the property was not given a priority within the dollars available, and in relation to other opportunities presented to the Board.

SECTION V

YEARLY CYCLE OF BOARD ACTIVITIES AND PROCESSING OF PROPOSALS

The following schedule has been adopted by the Board for this year's Michigan Land Trust Fund Program:

- | | |
|-----------|---|
| MARCH 1 | Land Acquisition Proposal Form available to the public. |
| JUNE 3 | Land Acquisition Proposal submission deadline. Staff reviews for: <ul style="list-style-type: none"> - eligibility and conformance to goals (see Sections II and III). - interest by land managing divisions of the DNR - interest by Lands Division, Land Resource Programs Division, Endangered and Threatened Species Program - required back-up information |
| JUNE | Board meeting. Board reviews all projects and eliminates those proposals which are ineligible, inappropriate, or insufficient; and those which are of no interest to the Board or state or local units of government.

Staff researches remaining proposals and prepares detailed recommendations to Board. |
| AUGUST | Board meeting to review staff recommendations and give directions regarding which proposals to carry forward for further documentation and review, including site inspections.

Staff arranges site inspections and seeks additional information as directed by Board. Proposals are preliminarily scored based on quantified criteria (see Section IV). |
| SEPTEMBER | Board meeting. Interested sponsors are given the opportunity to make formal presentations to the Board.

Staff reviews preliminary scores. |
| OCTOBER | Board meeting. Board reviews staff scores and other information regarding priority and feasibility. Board selects highest priority projects for further review and preliminary appraisal.

Staff obtains value estimates and other information as directed by the Board. |

DECEMBER Board meeting to review value estimates and other information necessary to make final funding decisions. Final List is drawn up. Board also reviews and evaluates program to make necessary changes for following year.

Staff prepares Annual Report and Final List for Submission to Legislature.

JANUARY Board meeting to confirm Final List and authorize submission of List and Annual Report to Legislature.

SECTION VI

ACQUISITION OF LANDS

The Board submits to the Legislature the annual list of recommended land acquisitions in priority order. Prior to acquisition of the lands, the Legislature must approve the list and appropriate funds, and the DNR Lands Division must approve a fair market value appraisal of the property. At that point, formal negotiations may take place.

It is expected that land acquisition will not occur until at least the fall following submission of the list of lands to the Legislature. For example, land nominations submitted for consideration by June 3, 1983 will be reviewed by the Board, and a recommended list of acquisitions will be sent to the Legislature in January, 1984. Acquisition will take place after legislative appropriation, appraisal and negotiation. This most likely will not be before the fall of 1984.

Project Agreements with local units of government will be entered into only after legislative approval of the list of land acquisitions. The Agreements will detail steps to be taken in the acquisition process. Funds will be disbursed on a reimbursement basis after proof of acquisition of marketable record title is submitted to the state. It is essential that land not be acquired until the local unit has a valid Agreement with the State of Michigan.

SECTION VII

RESPONSIBILITIES FOLLOWING ACQUISITION

A. RETENTION AND USE

Property acquired with assistance from the Trust Fund shall be retained and used for public outdoor recreation. Any property acquired or developed with Trust Fund assistance shall not be wholly or partly converted to other than public outdoor recreation uses without the approval of the Michigan Land Trust Fund Board and Natural Resources Commission.

B. OPERATION AND MAINTENANCE

Property acquired with assistance from the Trust Fund shall be operated and maintained as follows:

- 1) The property shall be maintained so as to appear attractive and inviting to the public.

- 2) Properties shall be kept safe for public use.
- 3) Buildings, roads, trails, or other structures and improvements constructed on these lands shall be kept in reasonable repair throughout their estimated lifetime, to prevent undue deterioration and encourage public use.
- 4) The facility shall be kept open for public use at reasonable hours and times of the year, according to the type of area or facility.

C. AVAILABILITY TO USERS

Property acquired with assistance from the Trust Fund shall be open to entry and use by all persons, regardless of race, color, religion, sex, or national origin.

D. CHANGES IN RECREATION USE

The use of property acquired with assistance from the Trust Fund may not be changed from that contemplated and approved when assistance was obtained, unless prior approval is obtained from the Michigan Land Trust Fund Board.

E. MINERAL RIGHTS

It is the policy of the Michigan Land Trust Fund Board that the State of Michigan be deeded all mineral rights, including sand and gravel rights, obtained through land acquisitions funded with Trust Funds. Exceptions are allowed only for grant projects in which a local unit of government acquires property. In that event, the local unit may retain a share of mineral interests, which share is based on the portion of the fair market value of the property which was provided by the local cash contribution of the grant recipient.

SECTION VIII

APPLICATION PROCEDURES AND REQUIREMENTS

A. OBTAINING PROPOSAL FORMS

Land acquisition proposal forms and information may be obtained in person or by mail from the Office of Budget and Federal Aid, Department of Natural Resources, 6th Floor, Stevens T. Mason Building, Lansing 48909, 1-517-373-1750.

B. GUIDELINES FOR PREPARATION OF FORMS

Instructions for completion of the two-page Land Acquisition Proposal Form are on the reverse side of each page. Please read these instructions carefully. To ensure full consideration of a proposal, the sponsor should give special consideration to the following items on the form:

- Item 3. Be sure to provide the precise location of the land, including the township and county.

- Item 8. Although matching funds are not required, the Board now gives priority to projects in which there will be cost sharing between the proposed land managing agency and the Michigan Land Trust Fund. If local funds will be used in this acquisition, be sure to indicate the source (donations, appropriations, contributions, etc.).
- Item 9. Pay special attention to this item. Be sure to attach maps which will help pinpoint the parcel in question.
- Also, master plans for the site must be included if the sponsor is nominating land for ownership by a local unit of government.
- Item 11H. If the land is proposed for local ownership, operation, and maintenance, the sponsor must submit with the proposal a resolution from that local governing body. The resolution must stipulate that the local unit of government will agree to 1) take title to the land in question; 2) assume management responsibilities of the land for public park purposes, including providing appropriate development and operation funds; and 3) ensure use of the land as a public park. Further, the resolution should state the amount or percentage which the local unit is willing to commit toward acquisition costs.
- Unless there is a resolution from the local unit, the Board will contact only the Department of Natural Resources for an expression of interest in owning and managing the property.

C. SUBMISSION OF PROPOSALS

Proposals must be submitted by June 3, 1983. The Office of Budget and Federal Aid may be contacted if assistance is needed in filling out the Proposal form, or identifying the significant resources on these lands. See Section IX for contact information.

SECTION IX

INFORMATION CONTACT

For additional information please contact:

Mr. Ed Hagan, Staff Assistant
Michigan Land Trust Fund Board
Department of Natural Resources
Office of Budget & Federal Aid
P.O. Box 30028
Lansing, MI 48909
Telephone: (517) 373-1750

FINAL NOTE: The Michigan Land Trust Fund board strives to make it as easy as possible for any individual, organization, or local unit of government to participate in this program. For this reason, the land acquisition proposal form has been kept as short as possible. It is not necessary to submit extremely lengthy proposals or costly, professionally prepared proposals. Clear and, above all, concise responses to each of the items on the form are desired (Do not overlook the value of one or two photographs). Please remember that the most significant acquisitions usually stand out on the merits of the property itself and the recreation opportunities that will be provided if the property is acquired.

1983

LAND ACQUISITION PROPOSAL
for the
MICHIGAN LAND TRUST FUND
created by the
KAMMER RECREATIONAL LAND TRUST FUND ACT
(Public Act 204 of 1976)

For State Use Only
Date Received
Project No.

NOTE: Mail this proposal to Michigan Department of Natural Resources, Office of Budget and Federal Aid, Box 30028,
 *Lansing, Michigan 48909

(Important: See Reverse Side For Instructions)

1. Project Title:			
2. Name of Sponsor:			Phone:
Address (Street, P.O. Box):		City, Zip Code:	
3. Location of Land to be Acquired:		4. The Land Interest Acquired will be:	
City:		<input type="checkbox"/> Fee Simple <input type="checkbox"/> Easement	
Township:		<input type="checkbox"/> Other:	
County:		Section(s):	
5. Present Zoning of Land:		6. Utilities Available at this Site:	
7. Enter Parcel Information Below:			
Name of Landowner	Acreage	State Equalized Value of Parcel	Total Estimated Acquisition Costs
a.			
b.			
c.			
d.			
e.			
TOTAL ACREAGE		TOTAL COSTS	
8. "Total Costs" listed above will be funded by:			
Michigan Land Trust Funds \$ _____			
Local Funds \$ _____			
Other: _____ \$ _____			
If applicable, identify specific source of local funds:			
9. Attach a location map, parcel map, photographs, and master plan with this Proposal Form.			
10. Brief Physical Description of Land			

Date _____ Signature _____

LAND ACQUISITION PROPOSAL for the MICHIGAN LAND TRUST FUND

SHEET 2

(See Reverse Side for Instructions)

11. Land Acquisition Information:

Check the appropriate boxes and provide information as requested below:

A. The land provides access to ☐ INLAND LAKE ☐ RIVER ☐ STREAM or is within a ☐ FLOODPLAIN.
Name the inland lake, river or stream _____

B. The land will provide public access and use of Great Lakes and connecting waters Shoreline. ☐ Yes ☐ No.

C. The land acquisition will provide opportunities to ☐ Hunt and/or ☐ Fish for the following:

D. The land provides potential for preserving or enhancing ☐ RARE ☐ FRAGILE ☐ or SCENIC areas or resources. If any of the boxes are checked explain what is rare, fragile or scenic and why the area or resource is considered as such.

E. The land will preserve or protect endangered and threatened species of ☐ FISH, ☐ WILDLIFE or ☐ PLANT LIFE.
Name the species if any box is checked, and the importance of the species.

F. Explain in the space provided below why this proposal should be considered as providing a potential for innovative and/or educational recreation opportunities.

G. Is there an imminent threat to the land from conflicting incompatible uses? ☐ Yes ☐ No.
If "Yes," what is the nature of the threat?

H. Who do you propose to own, operate and maintain this land for public recreation? _____
If a local unit of government is stated, attach a resolution from the local unit expressing a desire to own, operate and maintain the land as a public park.

I. Is this land immediately available for sale? ☐ Yes ☐ No.
Has the landowner or real estate agent been contacted to verify the availability? ☐ Yes ☐ No

APPENDIX C

ELEMENTS OF A LOCAL RECREATION PLAN

(Pursuant to Land and Water Conservation
Fund Eligibility Requirements)

A LOCAL RECREATION PLAN

The development of a recreation plan is beneficial to a community beyond simply meeting the requirements of any particular funding program. Once developed a local recreation master plan will become the community's guide for developing a total recreation program. A properly prepared recreation plan will determine:

- (1) what types of resources and/or facilities are needed;
- (2) the quantity required to meet these needs; and
- (3) where the facilities are to be located to best serve the people.

Answers to these questions will make it possible to determine program objectives and priorities for future land acquisition and development of facilities.

The local recreation plan is only one element of overall comprehensive planning. It must be coordinated with all planning efforts to insure present and future recreational needs are provided for in the community. Furthermore, a continuous planning effort will allow evaluation of the recreation system and indicate to elected officials and administrators the justification of such a program and its impact on the general public.

PREPARATION OF THE PLAN

There are several possible approaches to develop a local recreation plan. The specific approach selected is often determined by a community's size, location, planning capabilities or the particular uniqueness of each individual community.

Private Consultant

A private consultant is generally used by agencies serving large population centers or communities located near metropolitan areas. Usually numerous and complex problems exist in these areas, and the expertise of a competent recreation consultant is often necessary to develop an adequate recreation plan. If an agency decides this is the best alternative then the type and scope of the plan must be determined prior to selecting a consultant.*

*Selecting a consultant is discussed in Client/Consultant, 1977. Recreation Services Division, Department of Natural Resources, Lansing, Michigan.

Local Planning Commission

If adequately staffed, a planning commission-department may be capable of preparing a partial or complete recreation plan. Many planning departments have developed comprehensive community plans, and with adequate emphasis on the open space and parks and recreation section, it may meet the guidelines for the Land and Water Conservation Fund Program (LAWCON).

A Committee Approach

This method involves volunteer individuals in the planning process and requires significant community participation and dedication. It encourages local participation by establishing committees responsible for particular segments of a total plan. The park and recreation board or commission supervises and coordinates all phases to produce a comprehensive document.

RECREATION PLAN ELEMENTS

Regardless of the approach selected for a recreation plan, certain planning elements must be included. The emphasis given to the various elements may vary, but adequate coverage must be given to each of the eight elements below to ensure a satisfactory plan.

1. Plan Review and Adoption

A statement of plan review by the authorized local governing body and adoption by the Parks and Recreation Commission or other commission responsible for parks and recreation. Also a letter of transmittal indicating submission of the plan to the county and/or regional planning agency.

2. Administrative Structure

This section includes a discussion of the organizational structure and reference to the enabling resolution or ordinance establishing parks and recreation. A graphic flow chart indicating organization and responsibilities should be included. Furthermore, the methods, procedures and financing for operating, maintaining, and programming of recreation facilities should be explained.

3. Community Description

A description and location of the following significant cultural, physical and land use characteristics as they relate to and/or influence recreation in the community.

Cultural resources. Where appropriate, population characteristics should be broken down by planning areas, service areas, neighborhoods or census tracts to indicate social patterns, age groups, density, mobility and future projections. This section also includes the community's economic characteristics and transportation systems.

Physical resources. These resources are the community's landforms, water resources, climate, soils, vegetation and wildlife significant enough to influence recreation. A map of the community's land use classification and political boundaries should be incorporated into the plan.

4. Recreation Inventory

The recreation inventory describes how much of what kinds of facilities are located where. It includes all existing indoor and outdoor facilities provided by the public, quasi-public and private sector. Outdoor facilities include playgrounds, parks, tennis courts, pools, etc. Indoor facilities include community centers, senior citizen centers, pools, etc. School facilities such as gymnasiums, ballfields and playgrounds must be included if available for use by the public. Recreation facilities offered by the private sector are also part of this inventory (i.e. golf and tennis clubs, bowling alleys, etc.). More important than only the number of facilities is the capacity and amount of use of the facilities. Major facilities located in close enough proximity to influence the community's total recreation system must be discussed and located. This type of inventory information can often best be displayed using tables and maps.

5. Recreation Deficiencies

This important element involves an evaluation of present inventory data to determine deficiencies based upon present and projected needs. This process identifies the type of facilities and/or programs needed by special populations to be served at specific locations within the community.

Simply stated, this analysis decides "what is needed" in addition to "what is currently available". After the inventory of existing facilities and programs is completed, it may be discovered that some existing facilities need to be better utilized or that additional facilities are needed. Deficiencies may be determined by:

- (1) comparing the quantity of existing facilities with established "recreation standards";
- (2) comparing existing facilities and programs to those in similar communities;
- (3) simple population and income projections; or
- (4) a survey of citizen desires.

For some large cities or highly-populated counties, a more sophisticated supply-demand analysis based upon activity-days would be appropriate.

6. Long-Range Goals

Long-range goals are general statements which direct the agency's future development of recreation facilities and programs for the next 10 years or longer. They should express broad guidelines and creative foresight for future planning and action. This can be accomplished by identifying areas for land acquisition and development based upon the community's projected needs for recreation. Stating current problems and issues often encourages the development of realistic long-range goals.

7. Short-Term Objectives

The short-term objectives clearly state what recreation facilities and/or programs the local unit intends to develop within the next five years. These objectives must be presented so that specific project proposals, which meet the most obvious and pressing needs, can be identified. This evaluation is based upon recreation deficiencies (5) in conjunction with the action and financial program (8).

8. Action and Financial Program

A successful action and financial program is required to make the short-term objectives a reality. This is achieved by establishing a list of priorities for projects in conjunction with an adequate financing schedule necessary to complete the projects. This should include a year-by-year capital outlay program for a five-year period which also indicates expected funds from various grant programs (i.e. LAWCON, E.D.A. or Revenue Sharing, etc.).

Summary

Local units of government are encouraged to structure their own recreation plans. This material is provided only as a general guideline and briefly identifies some of the major planning elements to be considered in the preparation of a plan. To be a viable working document, the plan must be periodically reviewed and updated.

For more information regarding the Land and Water Conservation Fund contact:

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STATE OF MICHIGAN DEPARTMENT OF NATURAL RESOURCES RECREATION PLAN REVIEW	Local Unit	
	County	Region
	Recreation	PLAN TYPE
	Comprehensive (Recreation Element)	Date
	Updated Material	Date

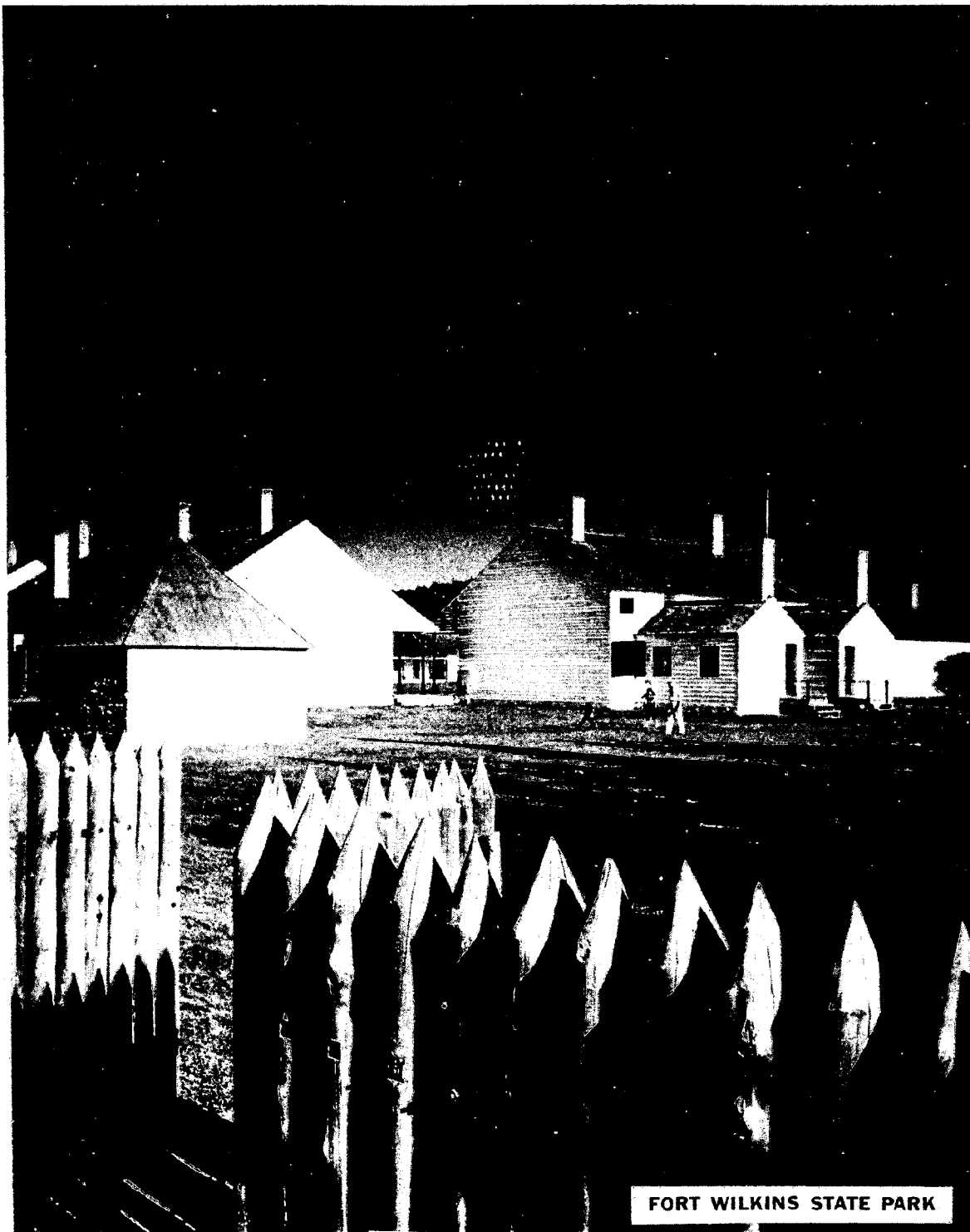
PLAN ELEMENTS

NEEDED FOR SATISFACTORY LAWCON REVIEW*

PLAN REVIEW AND ADOPTION <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	RESOLUTIONS FROM LOCAL GOVERNING BODY INDICATING REVIEW OF PLAN AND ADOPTION BY PARKS AND RECREATION COMMISSION OR RESPONSIBLE AGENCY. LETTER OF TRANSMITTAL OF PLAN SUBMISSION TO COUNTY AND/OR REGIONAL PLANNING AGENCY.
ADMINISTRATIVE STRUCTURE <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	REFERENCE TO ENABLING RESOLUTION OR ORDINANCE ESTABLISHING PARKS AND RECREATION PROGRAM, ORGANIZATION CHART, AND DE- SCRIPTION OF METHODS, PROCEDURES AND FINANCING TO DEVELOP, MAINTAIN AND PROGRAM RECREATION FACILITIES.
COMMUNITY DESCRIPTION <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	POPULATION BREAKDOWNS (social patterns, age groups, density, mobility) AND FUTURE PROJECTIONS BY PLANNING AREAS; ECONOMIC CHARACTERISTICS AND TRANSPORTATION SYSTEMS. PHYSICAL RESOURCES (landforms, water resources, climate, soils, vegetation, and wildlife). LAND USE CLASSIFICATION AND POLITICAL BOUNDARIES MAP.
RECREATION INVENTORY <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	MAP IDENTIFYING SIGNIFICANT LOCAL, COUNTY, STATE, FEDERAL AND PRIVATE FACILITIES AND PROGRAMS (acres, facilities) RELATE THIS DESCRIPTION TO THE MAP.
RECREATION DEFICIENCIES <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	IDENTIFICATION OF METHOD USED TO DETERMINE DEFICIENCIES; DESCRIPTION OF NEEDED FACILITIES, AREAS AND PROGRAMS AND RATIONALE FOR THIS NEED:
LONG-RANGE GOALS <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	STATEMENTS WHICH ADDRESS THE DESIRED RECREATION FACILITIES AND PROGRAMS THAT SHOULD BE PROVIDED 10 YEARS INTO THE FUTURE BASED UPON THE EXISTING AND PROJECTED DEFICIENCIES.
SHORT-TERM OBJECTIVES <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	MAP LOCATING PROPOSED AREAS AND FACILITIES; COMPLETE LISTING AND DESCRIPTION OF PROPOSED AREAS, FACILITIES AND PROGRAMS FOR FIVE (5) YEARS.
ACTION AND FINANCIAL PROGRAM <input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY	A YEARLY LISTING FOR 5 YEARS OF THOSE PROJECTS TO BE ACCOMPLISHED; COST ESTIMATE FOR EACH PROJECT; IDENTIFICATION OF POTENTIAL FUND SOURCES FOR THE PROJECTS.
Approved by DNR Review Committee _____ Date _____ Reviewed By: _____ Signature _____ Date _____	

*If a community is applying for LAWCON funds, this outline will be used by the Michigan DNR, Recreation Services Division, in the review and evaluation of local recreation plans.

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